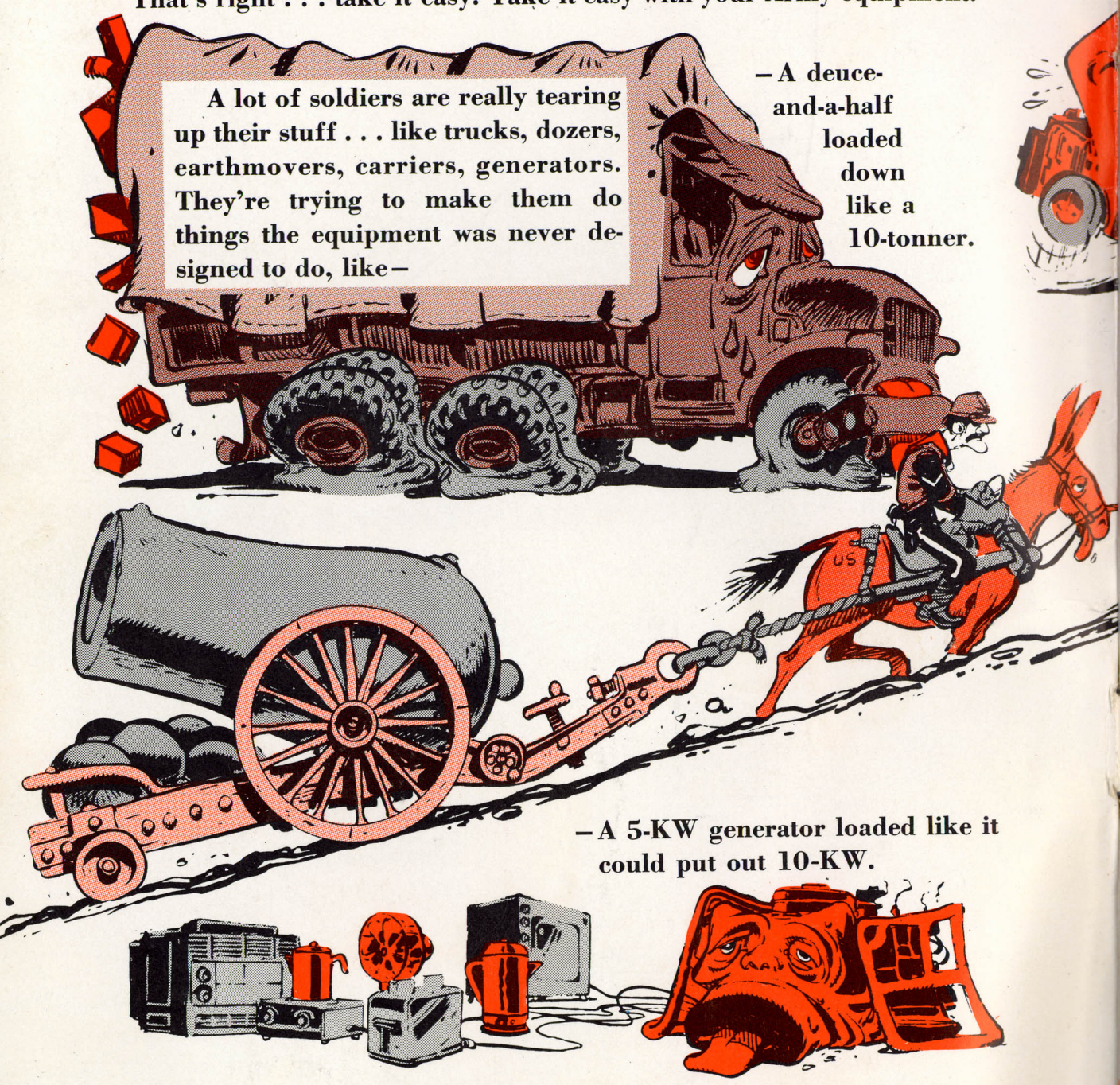
Issue 173
PS
1967 Series
THE PREVENTIVE MAINTENANCE MONTHLY
C'MON BART... WE GOTTA GET THESE MESSAGES THRU!!
I'LL NEVER MAKE IT, P.J.... I'M A VICTIM OF LOUSY PREVENTIVE MAINTENANCE!
COMMO CENTER
Will Eisner

Take it Ea

That's right . . . take it easy. Take it easy with your Army equipment.

A lot of soldiers are really tearing up their stuff . . . like trucks, dozers, earthmovers, carriers, generators. They're trying to make them do things the equipment was never designed to do, like—

—A deuce-and-a-half loaded down like a 10-tonner.



—A 5-KW generator loaded like it could put out 10-KW.

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—A deuce-and-a-half loaded down like a 10-tonner.

—A forklift trying to lift a load meant for a big crane.

—A dozer trying to move a mountain at one bite.

—A 5-KW generator loaded like it could put out 10-KW.

Stuff like that will bust them up every time. So, take it easy. Know what your gear will do. Read the load limits on the data plate or in the TM. And stay within the limits. Then your equipment will be around to work for you another day.

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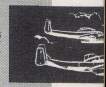

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40121

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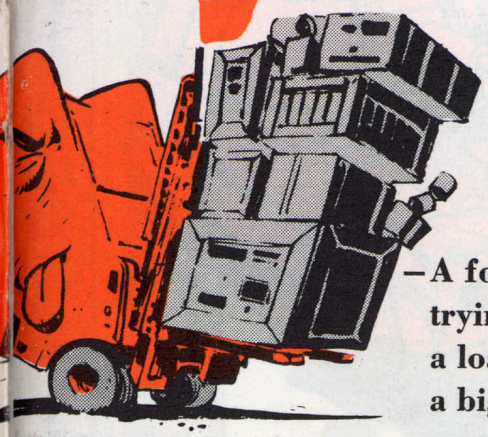

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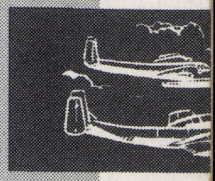

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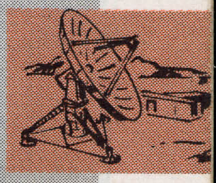

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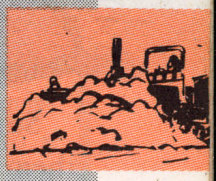

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This "consolidated" inspection-PM guide will help keep your weapon hitting paydirt. Use it when pulling your dailies, weeklies, and quarterlies—any time you're at a halt.

These 2 vehicles have about the same carriage, but from there up they're distant cousins, at best. So, be on your toes when you roam through these pages that you don't board the wrong deck by mistake.

FIREPOWER
BE YOUR OWN INSPECTOR (WITH ACCENT ON "SHOOT!")
M108 SP HOWITZER

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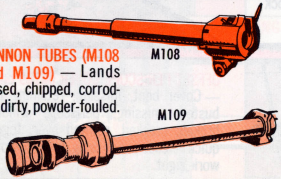
M109 SP HOWITZER

Howitzer Cannons



CANNON TUBES (M108 and M109) — Lands raised, chipped, corroded, dirty, powder-fouled.

Keep close tabs on your tube's wear and tear by jotting down the EFC (Equivalent Full Charge) rating in column g of its DA Form 2408-4 regularly after every firing session. If you ever have any doubt about the tube's serviceability, get your support guys to give it a borescope and pullover gage reading on the M108 and 126E1 cannon.

PS MORE

M109 SP HOWITZER

Howitzer Cannons

M108

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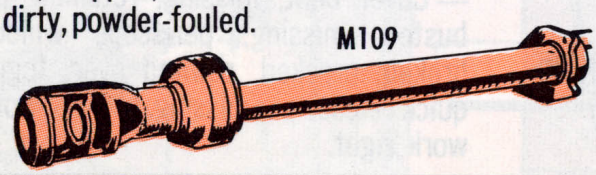
M109



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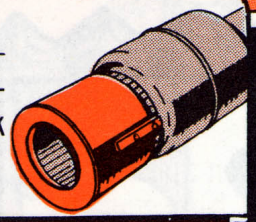
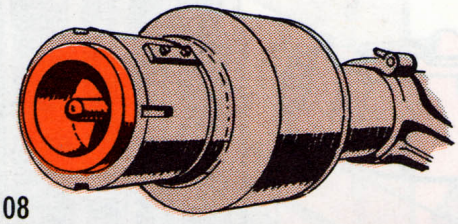
PS MORE

RING LOCK (M108) — Lock loose, dirty, powder-fouled; key, lock and screw damaged.

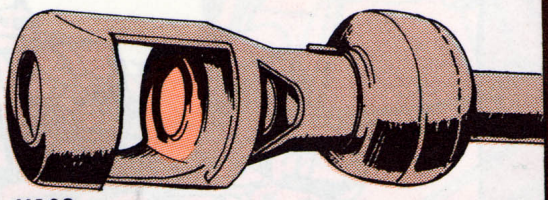


MUZZLE BRAKE (M109) — Loose; key lock or screw missing; threads damaged, installed wrong.

MUZZLE PLUG (M108 and M109) — Plug damaged, missing, torn, painted.



M108

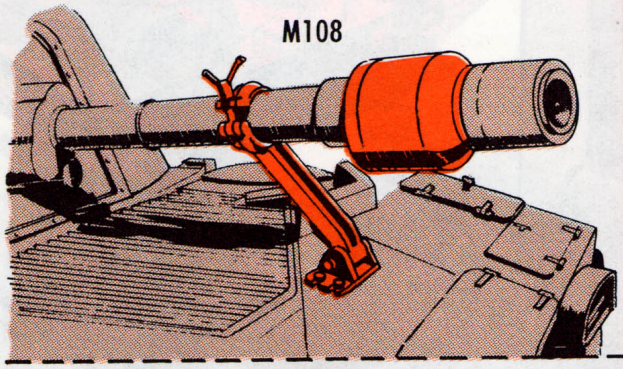


M109

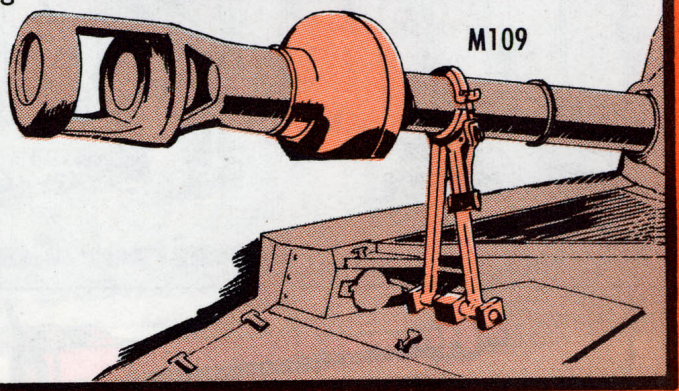
CHAMBER EVACUATOR (M108 and M109) — Evacuator dented, dirty, powder-fouled; drain plug (on M109 only) loose, missing, strip-threaded; stress band loose (stress band only on solid-type evacuator, not on welded type); key missing, damaged; key retaining screw strip-threaded, burred; piston valves frozen (won't move freely); valve cap threads damaged; retaining washer broken, missing; lug broken or improperly locked.

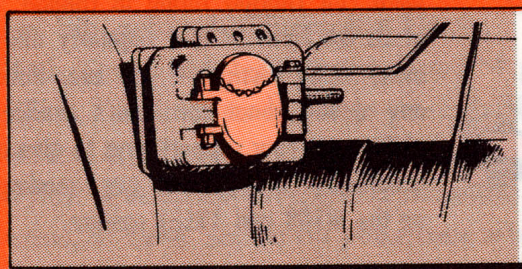
TRAVEL LOCK (M108 and M109) — Handle adjusted wrong, bent, damaged; locknut missing; band lining missing, worn, broken, frayed; lock stop busted, missing, adjusted wrong (there should be no play in the tube); stowage lock broken, missing.

M108



M109



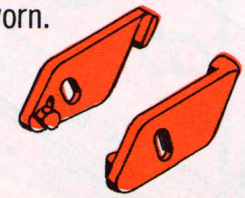


OFFSET PERISCOPE COVER (M109 only) — Cover bent, missing; retaining pin busted, missing; periscope window broken, cracked, painted over, foggy; quick release pin missing, broken, won't work right.

Breech Mechanism Assembly (M108 only)

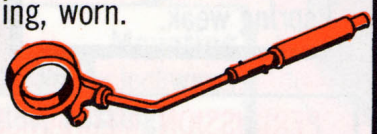
CLOSING SPRING ADJUSTOR — Cover dented, loose, missing; retainer ring busted, missing; adjustor damaged; pin loose, worn, missing; spring leaf weak, damaged.

EXTRACTORS — Nicked, powder-fouled, burred; plunger damaged, won't push in easy; spring weak, bent; guide worn, missing; extractor lugs loose or worn.

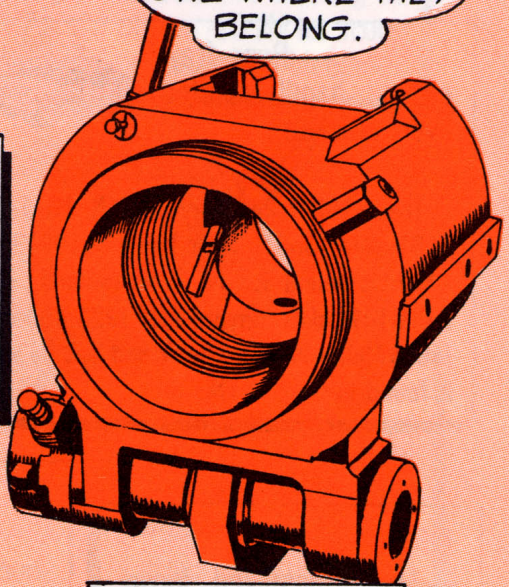


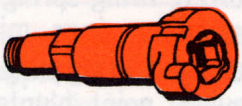
WHEN YOU ARE REASSEMBLING — BE SURE YOU GET THE **LEFT** AND **RIGHT** ONE WHERE THEY BELONG.

BREECHBLOCK OPERATING HANDLE — Unlatching plunger damaged; plunger spring weak; latch spring pin badly worn; handle bent; closing latch loose; clutch spring bent, weak; spring pin missing, worn.



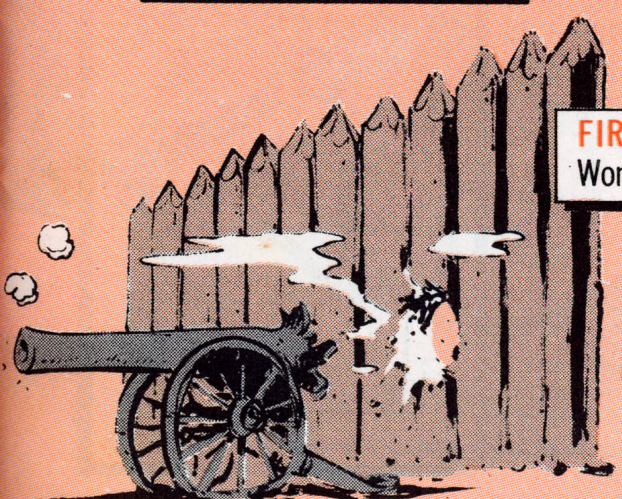
HANDLE STOP — Burred; mounting screws loose, missing.



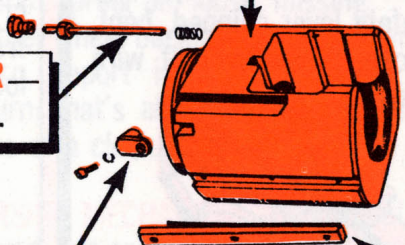


BREECHBLOCK OPERATING CRANK — Bracket chipped; detents missing, loose; pivot burred, nicked, scratched; crank chipped, burred.

BREECH RING BODY — Dirty, burred, nicked, roughed up.



FIRING PLUNGER — Won't push in easy.



KEY — Chipped, loose.

TORQUE KEY — Bar bent, chipped; screws loose, missing.

P.S. MORE

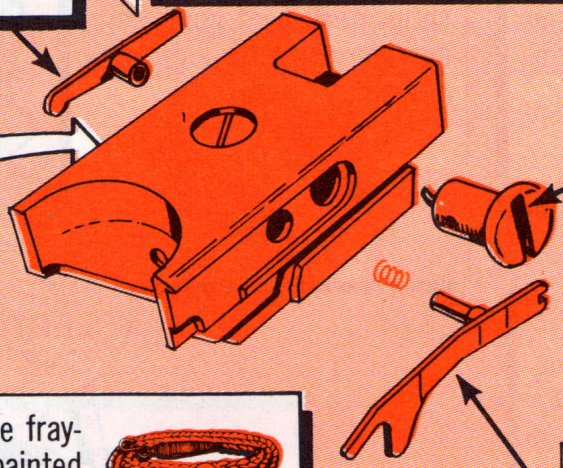
Breechblock Group (M108 only)

FIRING TRIGGER— Nicked, burred; installed wrong.

You'll find the correct procedure spelled out on page 413 of TM 9-2350-217-10.

KEEP BARE METAL LUBED.

SEAR — Dirty, burred, spring weak.



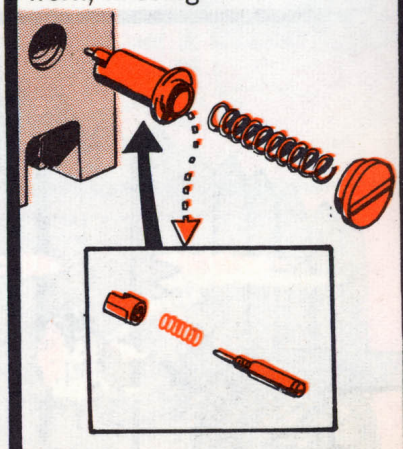
COCKING MECHANISM — Bushing damaged, burred; lock pin badly worn, missing; retractor nicked, burred, bent; spring pin missing, badly worn.

COCKING LEVER— Nicked, burred, dirty; spring weak.

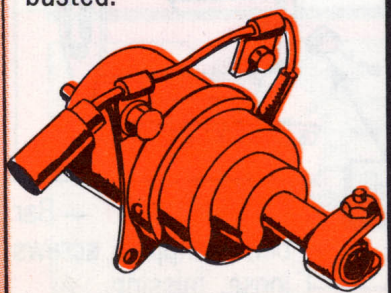
LANYARD— Rope frayed, cut; handle painted over, cracked.

The M108 takes lanyard FSN 1015-887-1381 (10913607) with handle (10913608) which is found in the -20P manual, while the M109 takes lanyard FSN 1025-600-6780 (6006780) with strap hook and handle which is found in the -10 TM.

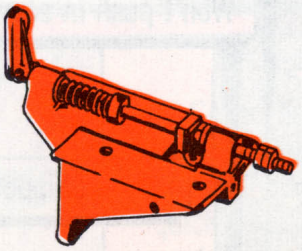
PERCUSSION MECHANISM — Spring retainer nicked, burred; firing spring weak; retaining rings missing, damaged; firing pin powder-fouled, point blunted; retracting spring weak, kinked; stop nicked, burred; guide dented, nicked, worn, burred; straight pin badly worn, missing.



FIRING SOLENOID GROUP — Mount damaged, loose; solenoid dented, lead wire cut, frayed; clamps missing, busted; solenoid contact disc loose, needs adjusting; safety lever chipped, bent, loose; mounting bolt wire busted.



SLIDING SHAFT AND FRAME GROUP — Contact plunger shoe bent, pin missing, worn; shaft bent; sleeve, spring, retainer, guide block and sleeve bearing dirty, damaged, missing; nuts cross-threaded, missing; frame bent; mounting bolts loose, damaged.



Breechblock Group (M108 only)

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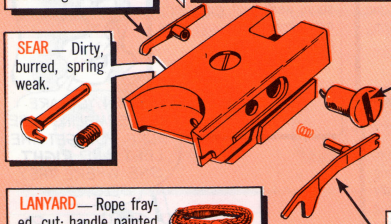

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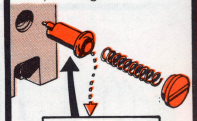

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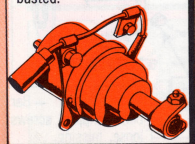

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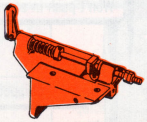


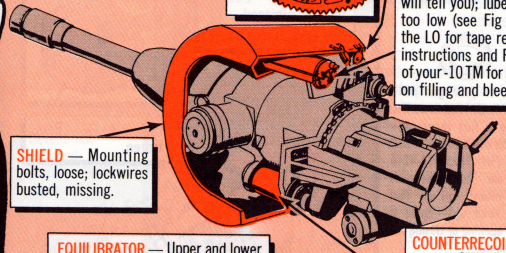
M139 Howitzer Mount (M108 only)

EJECTOR CAM AND BRACKET — Cam and bracket pitted; pin setscrew loose; mounting screws loose, lockwires busted, missing.

ELEVATING SECTOR GEAR — Gears chipped, nicked, burred, dirty; mounting bolts loose; lockwires busted, missing.

LANYARD PULLEYS AND HOLDERS — Pulleys damaged; holders busted. Replacing a pulley is a job for your support outfit.

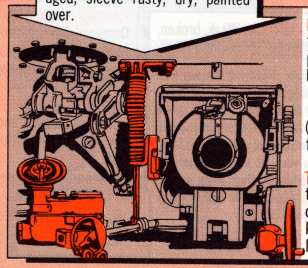
REPLENISHER— Leaks; tape broken (a **light** pull will tell you); lube level too low (see Fig 10 in the LO for tape reading instructions and Fig 96 of your -10 TM for scoop on filling and bleeding).



SHIELD — Mounting bolts, loose; lockwires busted, missing.

COUNTERRECOIL BUFFER — Oil level low (oil should be even with plug level when weapon's at zero degrees elevation).

EQUILIBRATOR — Upper and lower support mounting nuts loose; lower nut lockwires (4) loose, missing; cotter pin missing, busted in upper sleeve connection; spring damaged; sleeve rusty, dry, painted over.



ELEVATING MECHANISM — Handwheels turn hard; excessive backlash; wheels pitted; round nuts loose; knob chipped; knob shaft spring pin loose, missing.

If either wheel backlashes more than 1/6-turn, report it to Ord support. (1/6-turn: That's about 10 minutes on the face of a clock.)

TRAVERSING MECHANISM—Handwheel turns hard, has excessive backlash; mechanism housing pitted; round nut loose; knob chipped; knob shaft spring pin loose, missing.

MORE

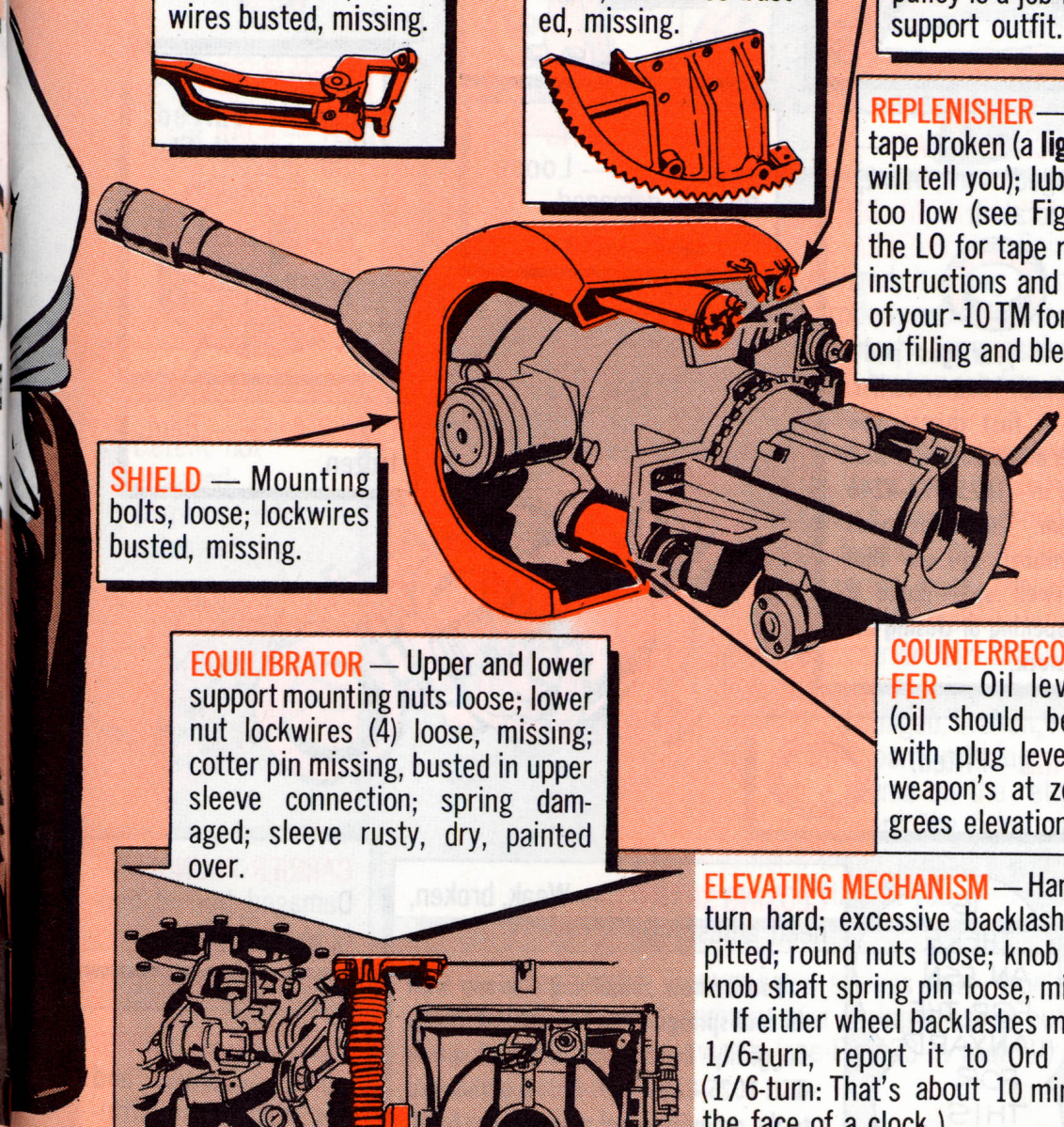
M139 Howitzer Mount (M108 only)

EJECTOR CAM AND BRACKET — Cam and bracket pitted; pin setscrew loose; mounting screws loose, lockwires busted, missing.

ELEVATING SECTOR GEAR — Gears chipped, nicked, burred, dirty; mounting bolts loose; lockwires busted, missing.

LANYARD PULLEYS AND HOLDERS — Pulleys damaged; holders busted. Replacing a pulley is a job for your support outfit.

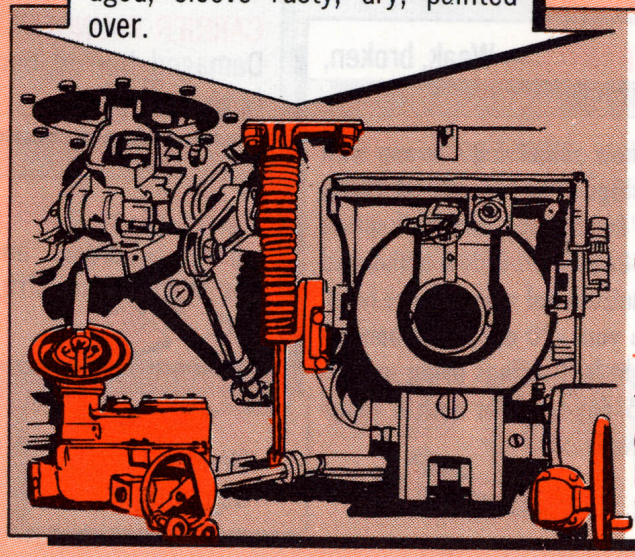
REPLENISHER — Leaks; tape broken (a **light** pull will tell you); lube level too low (see Fig 10 in the LO for tape reading instructions and Fig 96 of your -10 TM for scoop on filling and bleeding).



SHIELD — Mounting bolts, loose; lockwires busted, missing.

EQUILIBRATOR — Upper and lower support mounting nuts loose; lower nut lockwires (4) loose, missing; cotter pin missing, busted in upper sleeve connection; spring damaged; sleeve rusty, dry, painted over.

COUNTERRECOIL BUFFER — Oil level low (oil should be even with plug level when weapon's at zero degrees elevation).



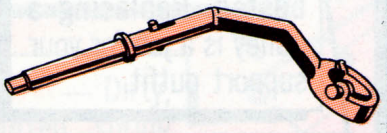
ELEVATING MECHANISM — Handwheels turn hard; excessive backlash; wheels pitted; round nuts loose; knob chipped; knob shaft spring pin loose, missing.

If either wheel backlashes more than 1/6-turn, report it to Ord support. (1/6-turn: That's about 10 minutes on the face of a clock.)

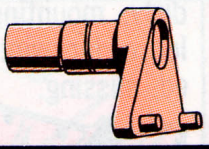
TRAVERSING MECHANISM — Handwheel turns hard, has excessive backlash; mechanism housing pitted; round nut loose; knob chipped; knob shaft spring pin loose, missing.

P.S MORE

OPERATING HANDLE ASSEMBLY — Plunger and spring weak, broken; pin loose (falls out); clutch assembly spring weak, won't disengage.



OPERATING CRANK ASSEMBLY — Cam rollers bent, binding.



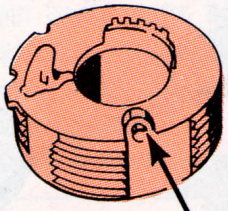
BREECHBLOCK OPERATOR GEAR — Teeth chipped, broken.

GAS CHECK PAD — Damaged, worn, burnt, deteriorated.

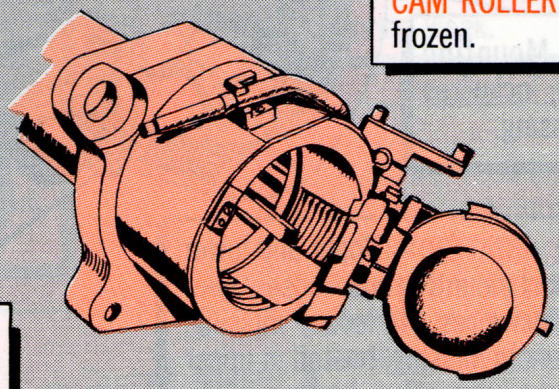
Hey, if your gas pad's dated March 1963 or earlier, replace it first chance you get with one made after that date. FSN 1025-994-4246 gets 'em. The older pads have rubber in 'em that could swell up — make it tough opening or closing the breechblock.

CLOSING SPRING ANCHOR PIN — Loose, threads damaged.

BREECHBLOCK — Threads burred. (Clean up with file.)



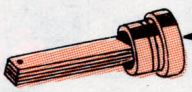
CAM ROLLER — Bent, frozen.



SPLIT RINGS—Pitted, corroded.

CLOSING SPRINGS — Weak, broken, need adjusting.

You'll know something's wrong with the leaf springs if the breechblock closes sluggishly. Incidentally, this leaf spring (FSN 1025-861-1479) is now authorized to the organizational maintenance level. Changes to your -20 and -25P manuals call for eight leaf springs being authorized per 15-day level for each 6 weapons supported.



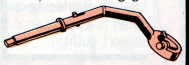
CARRIER PLUNGER — Damaged, burred, badly worn.

CARRIER RACK COVER PLATE — Screws and hex heads loose, stripped.

ADJUSTOR — Needs adjusting.

Breech Mechanism

OPERATING HANDLE ASSEMBLY — Plunger and spring weak, broken; pin loose (falls out); clutch assembly spring weak, won't disengage.



OPERATING CRANK ASSEMBLY — Cam rollers bent, binding.

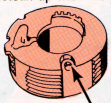
BREECHBLOCK OPERATOR GEAR — Teeth chipped, broken.

GAS CHECK PAD — Damaged, worn, burnt, deteriorated.

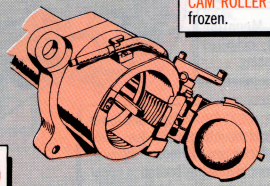
Hey, if your gas pad's dated March 1963 or earlier, replace it first chance you get with one made after that date. FSN 1025-994-4246 gets 'em. The older pads have rubber in 'em that could swell up — make it tough opening or closing the breechblock.

CLOSING SPRING ANCHOR PIN — Loose, threads damaged.

BREECHBLOCK — Threads burred. (Clean up with file.)



CAM ROLLER — Bent, frozen.



SPLIT RINGS — Pitted, corroded.

CLOSING SPRINGS — Weak, broken, need adjusting.

You'll know something's wrong with the leaf springs if the breechblock closes sluggishly. Incidentally, this leaf spring (FSN 1025-861-1479) is now authorized to the organizational maintenance level. Changes to your -20 and -25P manuals call for eight leaf springs being authorized per 15-day level for each 6 weapons supported.

CARRIER PLUNGER — Damaged, burred, badly worn.

CARRIER RACK COVER PLATE — Screws and hex heads loose, stripped.

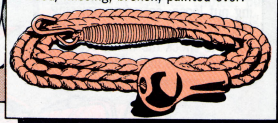
ADJUSTOR — Needs adjusting.

Assembly (M109 only)

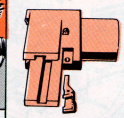
RACK SPRING, STOP PLATE — Damaged, weak.

BREECHBLOCK OPERATOR RACK — Teeth chipped, broken.

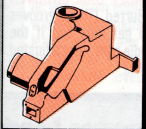
LANYARD LEVER AND ROPE — Lever bent, broken; lever pin worn, won't hold in groove; lanyard rope frayed, cut; S-hook bent, deformed; knob (plastic or wood) missing, broken, painted over.



FIRING MECHANISM HOUSING ASSEMBLY — Spindle nut damaged; housing rusty, dirty, corroded; extractor bent, damaged, rusty; compression spring weak, broken; spring pin bent, missing.



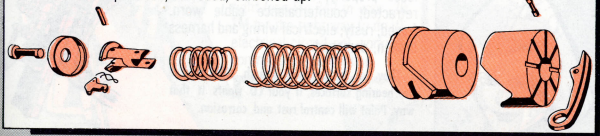
CARRIER RACK PLATE — Detent not engaged; plate burred, damaged.



FIRING MECHANISM BLOCK ASSEMBLY — Won't operate smoothly; knob cracked, broken; pin missing, worn; follower spring weak, broken; follower shaft and roller nicked, burred; screw damaged; carrier lugs broken, worn so bad they let the firing mechanism turn; firing pin damaged, broken, rusty; firing pin retainer bent, missing.

Keep a thumb on the retainer when you're removing the firing pin. This retainer's under pressure and could hurt you if it flies at you.

M35 FIRING MECHANISM — Won't work; compression springs weak, won't cock and fire; hammer guide yoke burred, corroded; hammer sear spring missing, put in upside down; hammer operating sear installed backwards (see Fig 123 in your -10 TM); hammer and cap burred, corroded, carboned up.



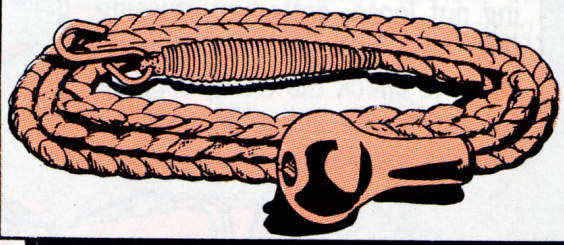
TOPS MORE

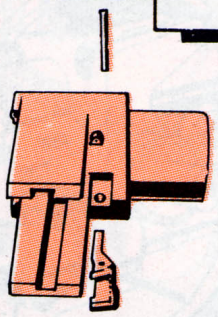
Assembly (M109 only)

RACK SPRING, STOP PLATE — Damaged, weak.

BREECHBLOCK OPERATOR RACK — Teeth chipped, broken.

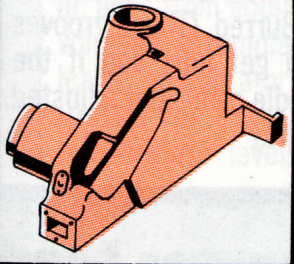
LANYARD LEVER AND ROPE — Lever bent, broken; lever pin worn, won't hold in groove; lanyard rope frayed, cut; S-hook bent, deformed; knob (plastic or wood) missing, broken, painted over.

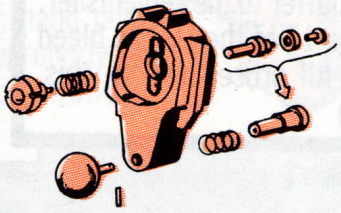




FIRING MECHANISM HOUSING ASSEMBLY — Spindle nut damaged; housing rusty, dirty, corroded; extractor bent, damaged, rusty; compression spring weak, broken; spring pin bent, missing.

CARRIER RACK PLATE — Detent not engaged; plate burred, damaged.





FIRING MECHANISM BLOCK ASSEMBLY — Won't operate smoothly; knob cracked, broken; pin missing, worn; follower spring weak, broken; follower shaft and roller nicked, burred; screw damaged; carrier lugs broken, worn so bad they let the firing mechanism turn; firing pin damaged, broken, rusty; firing pin retainer bent, missing.

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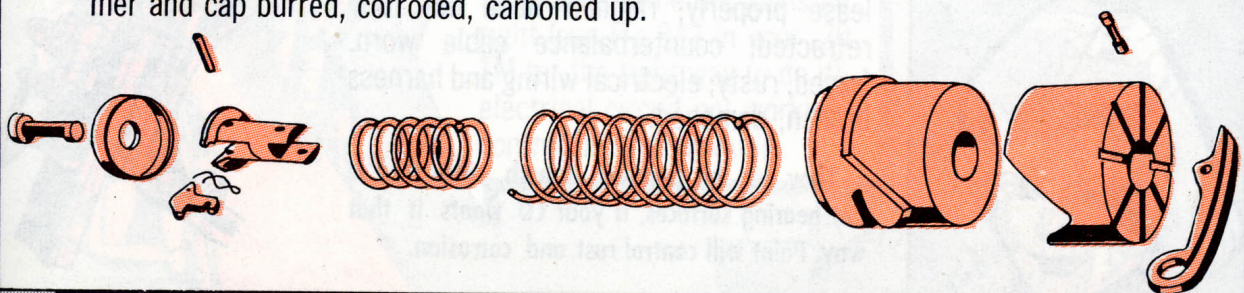


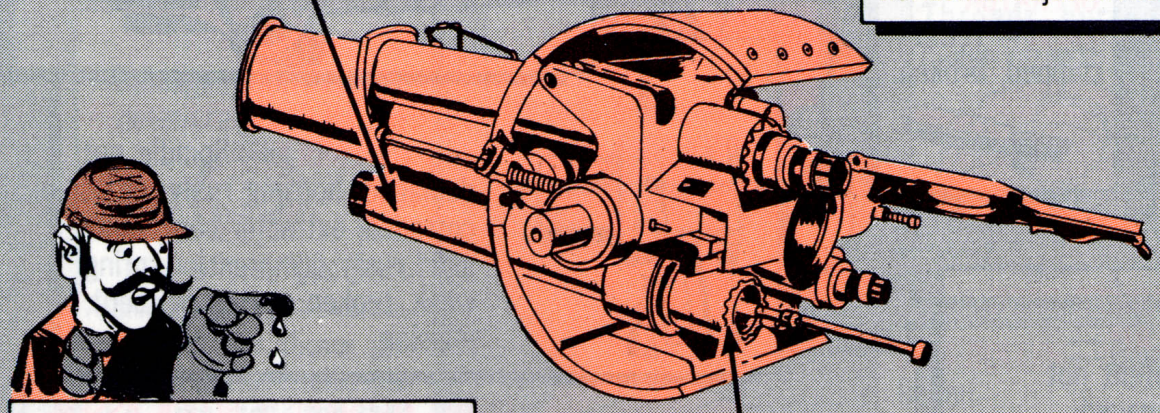
PS MORE

M127 Gun Mount

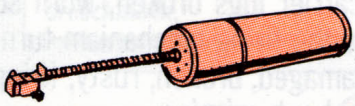
RECUPERATOR — Indicator pin sticks out more than ¾-in; leaks around piston rods; piston rod locking nut loose; cotter pin missing. (You have to remove or open the cover to check the front recuperator and piston indicator pins.)

LEFT SIDE

CRADLE CAM — Adjusted wrong. See Figs 335 and 336 in your -20 TM for correct adjustment. Just don't forget that you need both a vertical **and** a horizontal adjustment.



REPLENISHER — Leaks; tape broken (pull it **lightly** to check this); oil level too low. (See Fig 13 of your LO for the tape reading indicators.)



COUNTERRECOIL BUFFER — Leaks in hydraulic lines from the buffer to the replenisher. (Page 17 of the LO has bleed and fill procedures on this, too.)

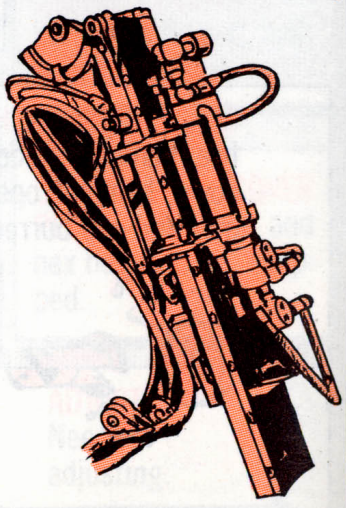
CRADLE CAM GROOVES —Burred. (These grooves can get hurt bad if the cradle cam's not adjusted right.)

Rammer Loader

STOWED POSITION—Hydraulic leaks; flexible lines frayed; swivel joints leak, bind, don't turn freely; machined surfaces corroded, rusty, dirty (if unpainted).

Handles won't lock securely; won't release properly; rammer head not fully retracted; counterbalance cable worn, frayed, rusty; electrical wiring and harness broken, damaged.

They can be painted, though, since they're not bearing surfaces, if your CO wants it that way. Paint will control rust and corrosion.



M127 Gun Mount

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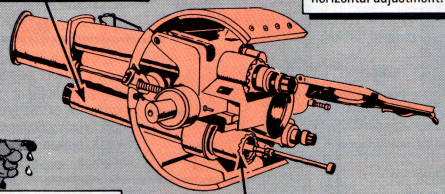

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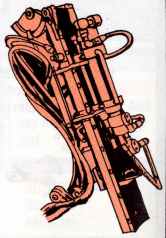
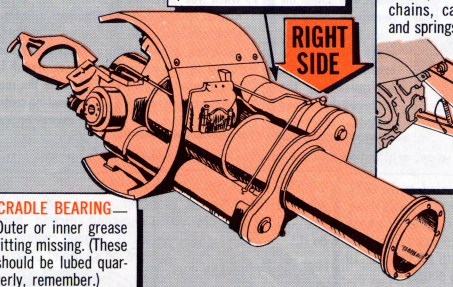


(M109 only)

VARIABLE RECOIL CYLINDERS — Leak. (See page 17 of the LO for bleed and fill procedures.)

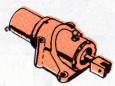
RIGHT SIDE

SPADES (M109 only) — Won't emplace or stow easy; spade face burred; welds cracked, chains, cables, pins and springs missing.



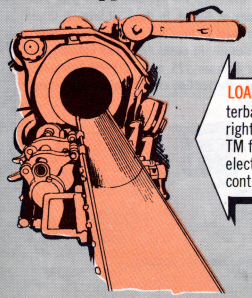
CRADLE BEARING — Outer or inner grease fitting missing. (These should be lubed quarterly, remember.)

EQUILIBRATOR — Leaks in hydraulic lines from equilibrator to reservoir and accumulator; hand pump leaks; equilibrator improperly adjusted for existing ground or temperature levels.



(Late production only) Some vehicles incorporate a combination equilibrator/elevating mechanism connected to a reservoir, hand pump and accumulator by interconnecting oil lines. Check this version for hydraulic line leakage.

(M109 only)



COUPLA EXTRA TIPS-ALWAYS DISCONNECT ELECTRICAL LINE AT RAMMER SOLENOID CONTROL VALVE... NEVER OPERATE RAMMER ELECTRICALLY WITHOUT A DUMMY ROUND!

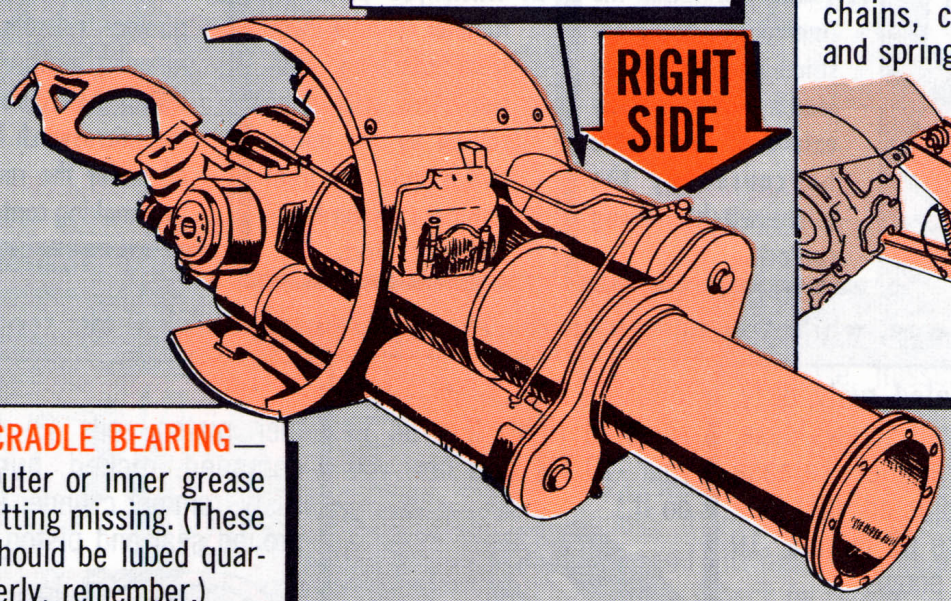
LOADING POSITION — Counterbalance cable not adjusted right (see Fig 342 in your -20 TM for the right way to do it); electrical circuit not working; control box not working.

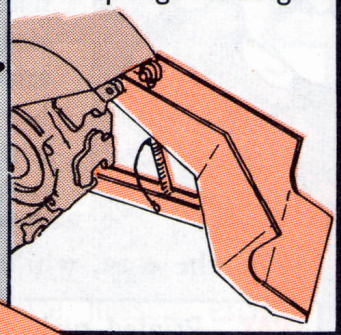
MORE

(M109 only)

VARIABLE RECOIL CYLINDERS— Leak. (See page 17 of the LO for bleed and fill procedures.)

SPADES (M109 only) — Won't emplace or stow easy; spade face burred; welds cracked, chains, cables, pins and springs missing.





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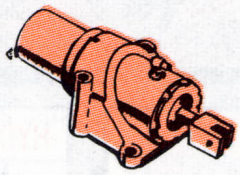

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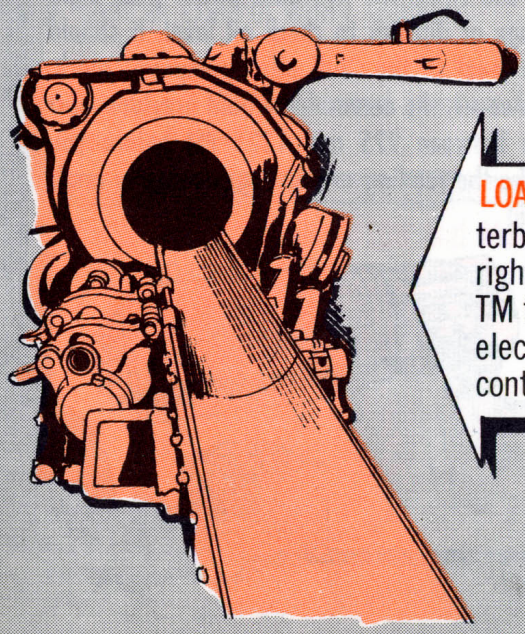
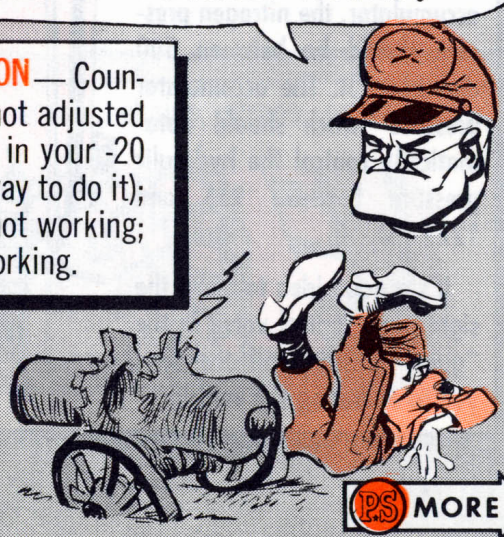
(M109 only)



COUPLA EXTRA TIPS-ALWAYS DISCONNECT ELECTRICAL LINE AT RAMMER SOLENOID CONTROL VALVE... NEVER OPERATE RAMMER ELECTRICALLY WITHOUT A DUMMY ROUND!

LOADING POSITION— Counterbalance cable not adjusted right (see Fig 342 in your -20 TM for the right way to do it); electrical circuit not working; control box not working.



PS MORE

Doublecheck the operation of the circuit and rammer control (Think) box by listening for these 3 clicks (when you have the master switch and cab power switch ON, of course):

CLICK

1. When you lower the rammer into firing position and the hinged loading tray is fully extended. This click'll be caused by the microswitch making contact.

CLICK

2. When you pivot the rammer cylinder away from ramming position. This click'll be caused by the microswitch under the front rammer cylinder hinge making contact.

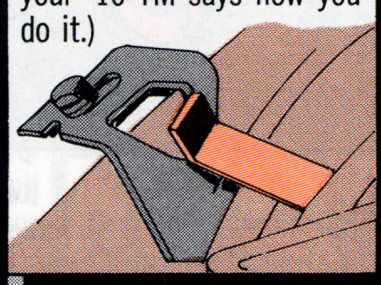
CLICK

3. When you pivot the rammer cylinder into ramming position. This click'll be caused by the microswitch located under the rammer tray making contact.

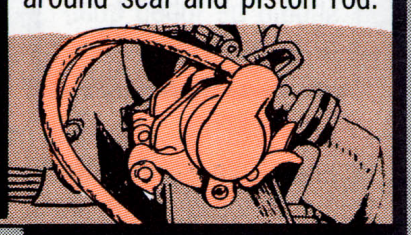
By the way, while you have it in the loading position, check these, too:

TRAY—Painted, rusty, dirty, bent, damaged; screws loose, missing; rammer release latch not adjusted right (See Figs 59 thru 62 in your -10 TM for the poop).

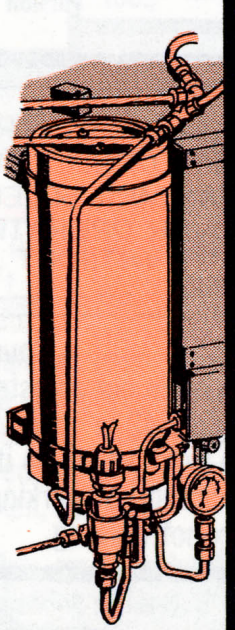
RAMMER INDICATOR—Not adjusted right. (Fig 94 in your -10 TM says how you do it.)



RAMMING POSITION—Rammer piston rods (3) leak, damaged, nicked, burred, rusty; rammer cylinder leaks around seal and piston rod.



ACCUMULATOR — Wrong nitrogen pressure; connectors loose, leaking, damaged; sight gage control valve broken or won't work (this'll give you a false reading, so watch it!)

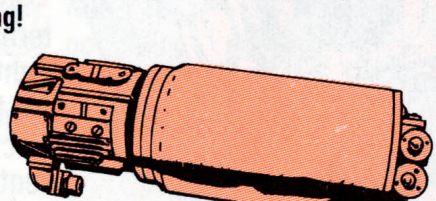


With the oil drained from the accumulator, the nitrogen pressure should be between 500 and 550 PSI. The accumulator pressure switch should automatically control the hydraulic pressure between 925 and 1225 PSI.

It's a good idea to leave the sight gage control valve in the "gage" position all the time you're operating the vehicle.

HYDRAULIC POWER PACK RESERVOIR — Hydraulic leaks; retaining band loose; bolts and nuts loose; oil level in reservoir low.

Use either the hydraulic power pack sight gage or dipstick to check oil level. It should be level to the "full after pumping" mark. However, the accumulator fluid pressure must be between 925 and 1225 PSI before you take the reading or you'll get a phony reading!



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CLICK

1. When you lower the rammer into firing position and the hinged loading tray is fully extended. This click'll be caused by the microswitch making contact.

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2. When you pivot the rammer cylinder away from ramming position. This click'll be caused by the microswitch under the front rammer cylinder hinge making contact.

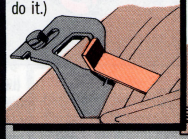
CLICK

3. When you pivot the rammer cylinder into ramming position. This click'll be caused by the microswitch located under the rammer tray making contact.

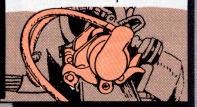
By the way, while you have it in the loading position, check these, too:

TRAY—Painted, rusty, dirty, bent, damaged; screws loose, missing; rammer release latch not adjusted right (See Figs 59 thru 62 in your -10 TM for the poop).

RAMMER INDICATOR—Not adjusted right. (Fig 94 in your -10 TM says how you do it.)



RAMMING POSITION—Rammer piston rods (3) leak, damaged, nicked, burred, rusty; rammer cylinder leaks around seal and piston rod.



ACCUMULATOR — Wrong nitrogen pressure; connectors loose, leaking, damaged; sight gage control valve broken or won't work (this'll give you a false reading, so watch it!)

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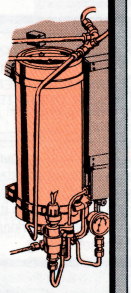
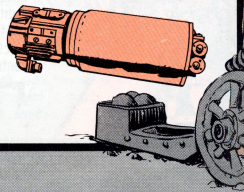
It's a good idea to leave the sight gage control valve in the "gage" position all the time you're operating the vehicle.

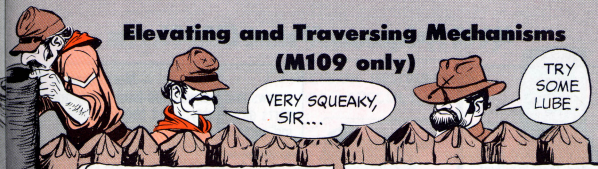


HYDRAULIC POWER PACK RESERVOIR — Hydraulic leaks; retaining band loose; bolts and nuts loose; oil level in reservoir low.

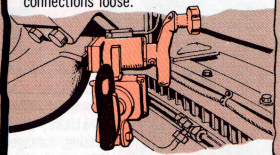
Use either the hydraulic power pack sight gage or dipstick to check oil level. It should be level to the "full after pumping" mark. However, the accumulator fluid pressure must be between 925 and 1225 PSI before you take the reading or you'll get a phony reading!



Elevating and Traversing Mechanisms (M109 only)



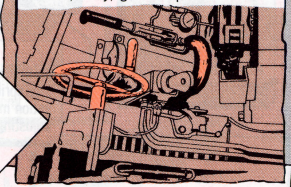
ELEVATING (MANUAL) — Hand pump knob loose, cracked; won't turn easy; backlash; manual accumulator leaks; connections loose.



ELEVATING (POWER) — Won't elevate smoothly; creeps when power handle's in neutral; elevating cylinder leaks; rod damaged, rusty, corroded; hydraulic lines and fittings loose, leak; lines bent.

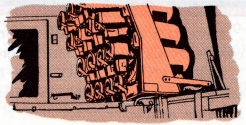
TRAVERSING (POWER)—Magnetic brake actuator won't work; indicator light (red) won't go on; main toggle switch out of order, busted; toggle switch to assistant gunner control won't work.

TRAVERSING (MANUAL) — Power Manual or Hi-Lo selector control lever won't work; bolt worn, loose, strike worn, loose; selector level trigger won't release (spring busted); shaft twisted; fork setscrews loose, missing; excessive backlash on handwheel (1/6-turn is OK, though); handwheel squeaks, rusty; weapon won't traverse smoothly (binds); traversing gear housing leaks; lines and fittings leak; gear case oil level low (check by removing the plug); base ring dirty; gears chipped, nicked, burred, rusty, gooked up.



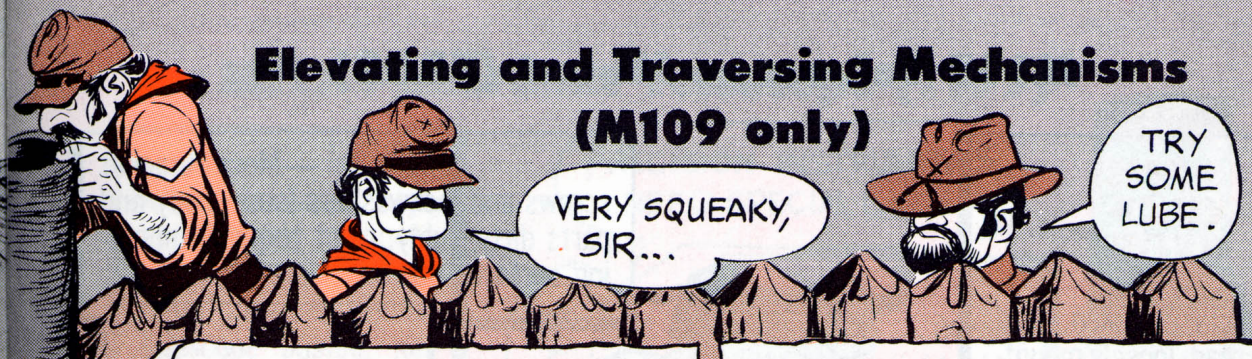
Reminder: Shift from manual to power (or power to manual) real easy — just jiggle the handle so gears will mesh.

AMMO RACKS (both M108 and M109) — Latches, spring, chains, straps, safety wires, etc. damaged, broken, missing.



P.S. MORE

Elevating and Traversing Mechanisms (M109 only)



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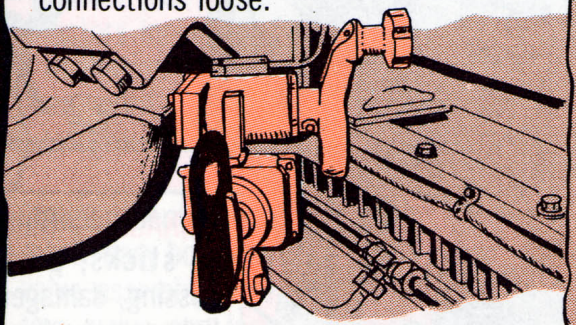

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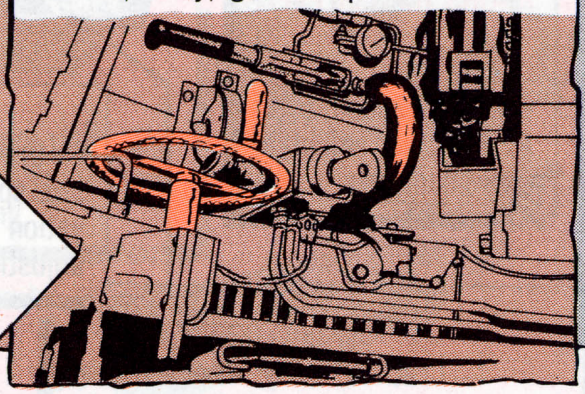

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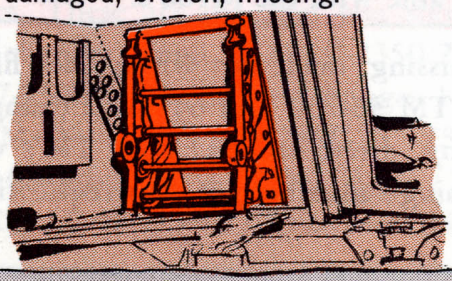
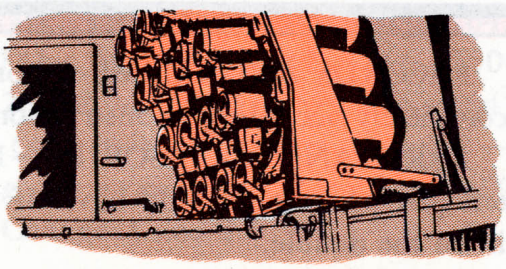
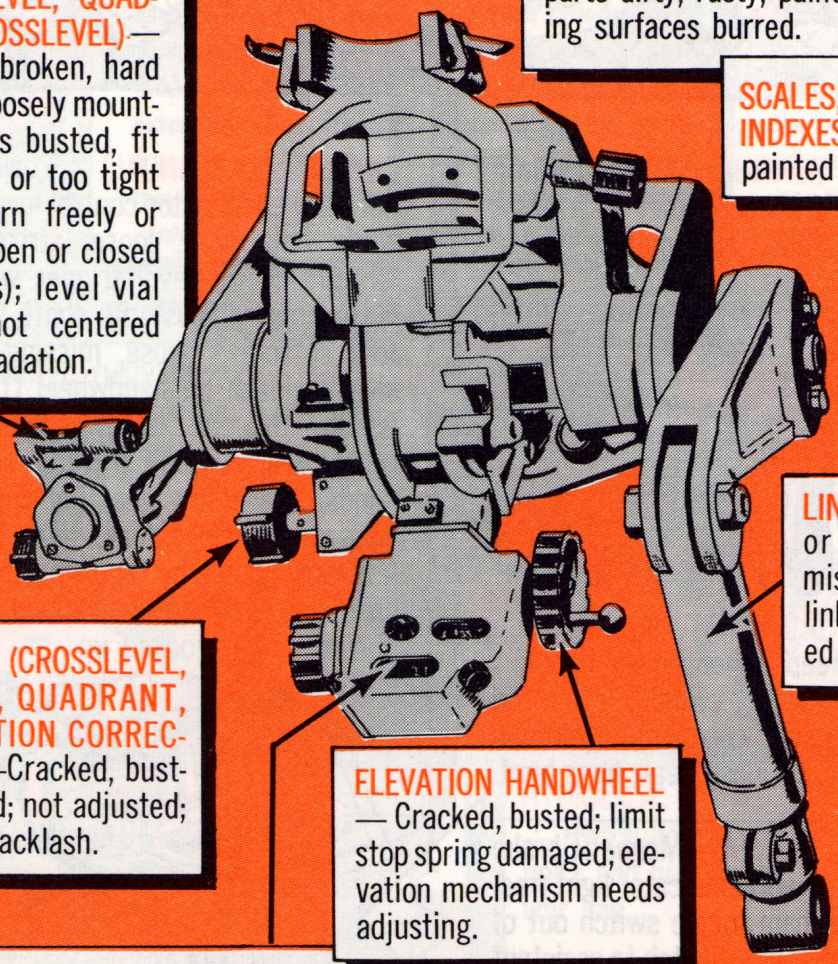




PS MORE

M145 Telescope Mount (T208)



VIALS (CROSSLEVEL, ELEVATION LEVEL, PITCH LEVEL, QUADRANT CROSSLEVEL)—Cracked, broken, hard to read; loosely mounted; covers busted, fit too loose or too tight (won't turn freely or hold at open or closed positions); level vial bubble not centered within gradation.

GENERAL APPEARANCE—Mount bracket screws and lockwashers loose; body and parts dirty, rusty, paint chipped; mounting surfaces burred.

SCALES, NAMEPLATES, INDEXES—Hard to read, painted over.

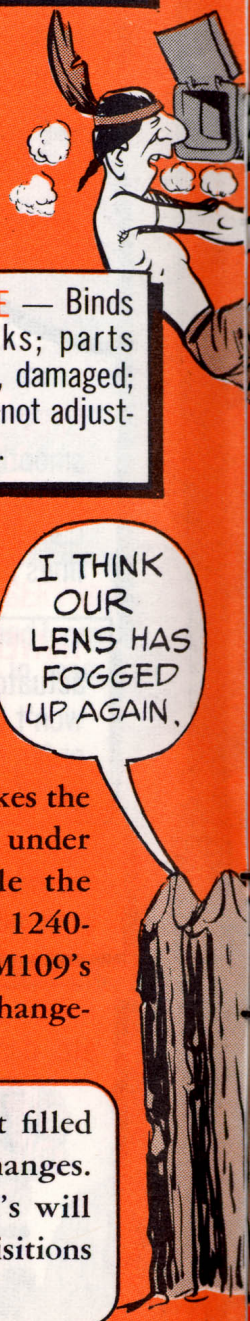
LINKAGE — Binds or sticks; parts missing, damaged; linkage not adjusted right.

KNOBS (CROSSLEVEL, PITCH, QUADRANT, ELEVATION CORRECTION)—Cracked, busted, bind; not adjusted; show backlash.

ELEVATION HANDWHEEL — Cracked, busted; limit stop spring damaged; elevation mechanism needs adjusting.

COUNTERS (ELEVATION AND CORRECTION) — Cracked, dirty, condensation, hard to read; digits won't line up right.

ELECTRICAL PARTS — Lamps burned out; lenses cracked; chipped, broken; electrical parts and wiring damaged.



Incidentally, the M108 takes the linkage assembly that goes under FSN 1240-871-2973 while the M109's linkage takes FSN 1240-871-5475. This means the M109's is longer and is not interchangeable with the M108's.

RECORDS AND FORMS—Torn, missing, made out wrong, not filled completely according to instructions in TM 38-750 (Jul 64) w/2 changes.

PARTS AND ACCESSORIES—Missing, dirty, broken. Your TM's will tell you what you should have. If anything's missing, get your requisitions in on the double.

M145 Telescope Mount (T208)

VIALS (CROSSLEVEL, ELEVATION LEVEL, PITCH LEVEL, QUADRANT CROSSLEVEL) — Cracked, broken, hard to read; loosely mounted; covers busted, fit too loose or too tight (won't turn freely or hold at open or closed positions); level vial bubble not centered within gradation.

GENERAL APPEARANCE — Mount bracket screws and lockwashers loose; body and parts dirty, rusty, paint chipped; mounting surfaces burred.

SCALES, NAMEPLATES, INDEXES — Hard to read, painted over.

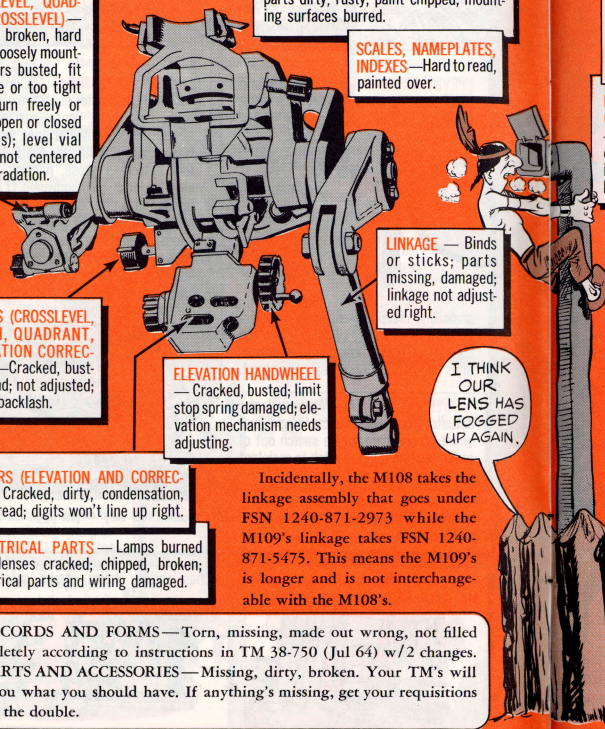
LINKAGE — Binds or sticks; parts missing, damaged; linkage not adjusted right.

KNOBS (CROSSLEVEL, PITCH, QUADRANT, ELEVATION CORRECTION) — Cracked, busted, bind; not adjusted; show backlash.

ELEVATION HANDWHEEL — Cracked, busted; limit stop spring damaged; elevation mechanism needs adjusting.

COUNTERS (ELEVATION AND CORRECTION) — Cracked, dirty, condensation, hard to read; digits won't line up right.

ELECTRICAL PARTS — Lamps burned out; lenses cracked; chipped, broken; electrical parts and wiring damaged.



Incidentally, the M108 takes the linkage assembly that goes under FSN 1240-871-2973 while the M109's linkage takes FSN 1240-871-5475. This means the M109's is longer and is not interchangeable with the M108's.

RECORDS AND FORMS — Torn, missing, made out wrong, not filled completely according to instructions in TM 38-750 (Jul 64) w/2 changes.

PARTS AND ACCESSORIES — Missing, dirty, broken. Your TM's will tell you what you should have. If anything's missing, get your requisitions in on the double.

M117 Panoramic Telescope (T177)

MOUNTING — Installed wrong; telescope keys not engaged in mount keyways; ways burred, dirty; clevises (2) on telescope busted, not latched to M145 mount.

ELECTRICAL RECEPTACLES AND CONTACTS — Contact pins bent; connectors loose; wiring insulation frayed, broken, worn.

ELBOW ASSEMBLY — Chipped, dented; won't rotate easy both ways; valve assembly defective; valve cap loose, damaged.

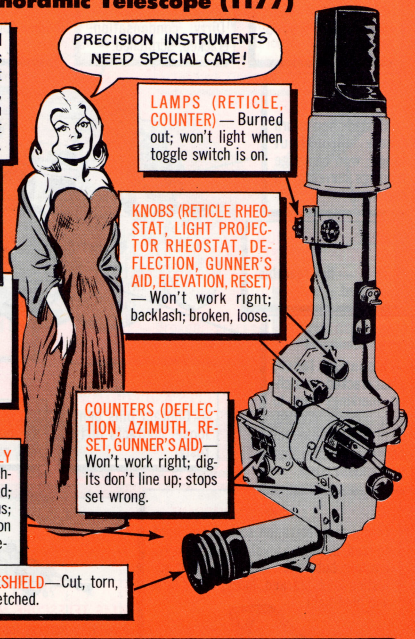
EYEPIECE ASSEMBLY — Glass dirty, scratched, smeared, cracked; image out of focus; water or condensation visible through eyepiece.

EYESHIELD — Cut, torn, stretched.

LAMPS (RETICLE, COUNTER) — Burned out; won't light when toggle switch is on.

KNOBS (RETICLE RHEOSTAT, LIGHT PROJECTOR RHEOSTAT, DEFLECTION, GUNNER'S AID, ELEVATION, RESET) — Won't work right; backlash; broken, loose.

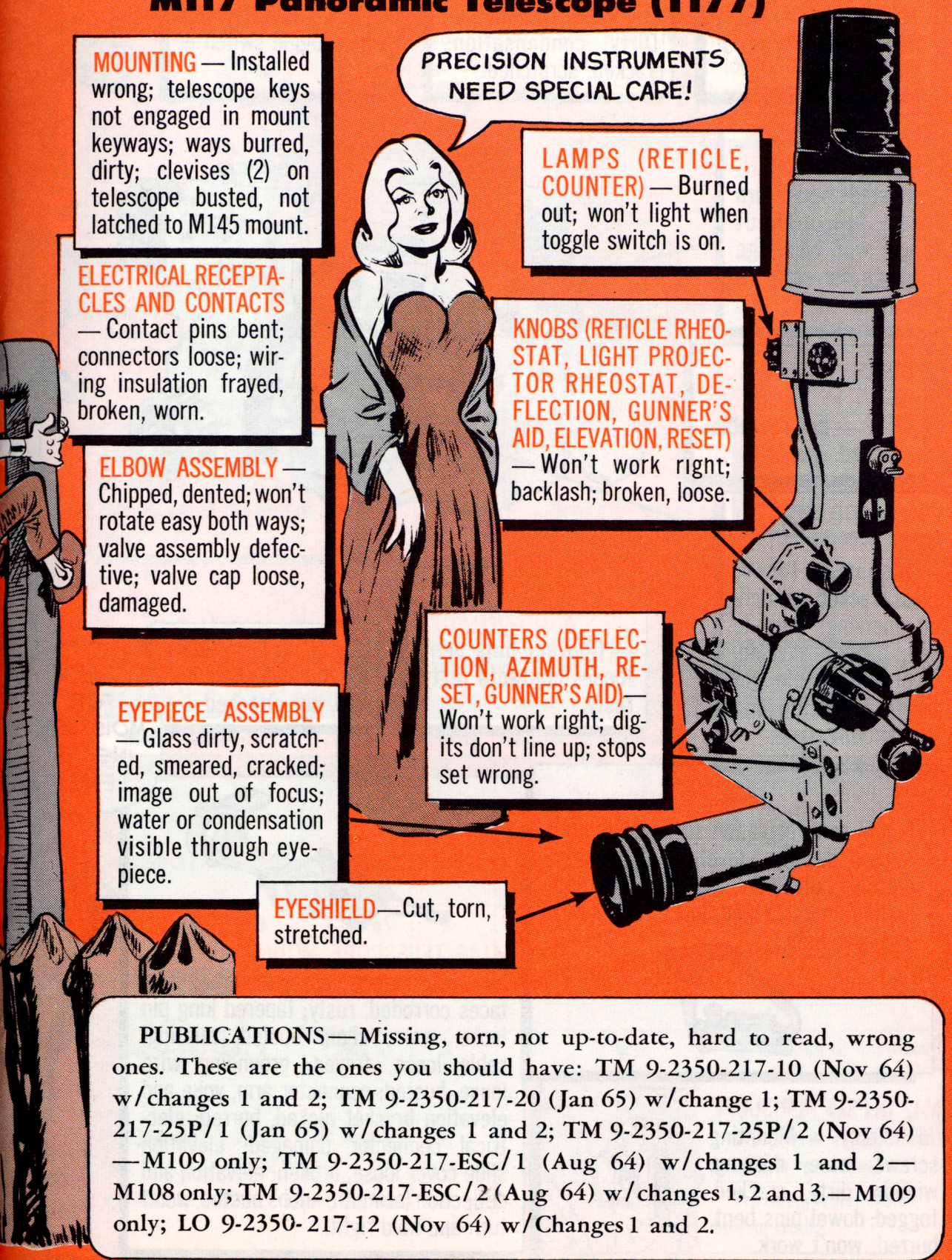
COUNTERS (DEFLECTION, AZIMUTH, RESET, GUNNER'S AID) — Won't work right; digits don't line up; stops set wrong.



PUBLICATIONS — Missing, torn, not up-to-date, hard to read, wrong ones. These are the ones you should have: TM 9-2350-217-10 (Nov 64) w/changes 1 and 2; TM 9-2350-217-20 (Jan 65) w/change 1; TM 9-2350-217-25P/1 (Jan 65) w/changes 1 and 2; TM 9-2350-217-25P/2 (Nov 64) — M109 only; TM 9-2350-217-ESC/1 (Aug 64) w/changes 1 and 2 — M108 only; TM 9-2350-217-ESC/2 (Aug 64) w/changes 1, 2 and 3. — M109 only; LO 9-2350-217-12 (Nov 64) w/Changes 1 and 2.

MORE

M117 Panoramic Telescope (T177)



MOUNTING — Installed wrong; telescope keys not engaged in mount keyways; ways burred, dirty; clevises (2) on telescope busted, not latched to M145 mount.

ELECTRICAL RECEPTACLES AND CONTACTS — Contact pins bent; connectors loose; wiring insulation frayed, broken, worn.

ELBOW ASSEMBLY — Chipped, dented; won't rotate easy both ways; valve assembly defective; valve cap loose, damaged.

EYEPIECE ASSEMBLY — Glass dirty, scratched, smeared, cracked; image out of focus; water or condensation visible through eyepiece.

EYESHIELD — Cut, torn, stretched.

LAMPS (RETICLE, COUNTER) — Burned out; won't light when toggle switch is on.

KNOBS (RETICLE RHEOSTAT, LIGHT PROJECTOR RHEOSTAT, DEFLECTION, GUNNER'S AID, ELEVATION, RESET) — Won't work right; backlash; broken, loose.

COUNTERS (DEFLECTION, AZIMUTH, RESET, GUNNER'S AID) — Won't work right; digits don't line up; stops set wrong.

PUBLICATIONS — Missing, torn, not up-to-date, hard to read, wrong ones. These are the ones you should have: TM 9-2350-217-10 (Nov 64) w/changes 1 and 2; TM 9-2350-217-20 (Jan 65) w/change 1; TM 9-2350-217-25P/1 (Jan 65) w/changes 1 and 2; TM 9-2350-217-25P/2 (Nov 64) — M109 only; TM 9-2350-217-ESC/1 (Aug 64) w/changes 1 and 2 — M108 only; TM 9-2350-217-ESC/2 (Aug 64) w/changes 1, 2 and 3. — M109 only; LO 9-2350-217-12 (Nov 64) w/Changes 1 and 2.

PS MORE

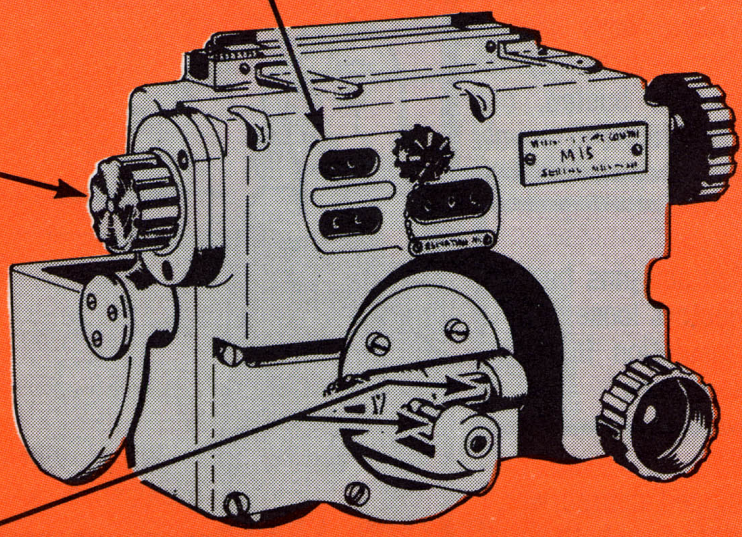
M15 Elevation Quadrant (T23E2)

HAND LIGHT — Won't work; cable frayed, busted.

COUNTER WINDOWS — Dirty, condensation; cracked, scratched.

LAMPS — Won't light when toggle switch is on.

KNOBS (CORRECTION, ELEVATION COUNTER) — Busted; won't turn freely throughout range; won't change readings correctly on registers.



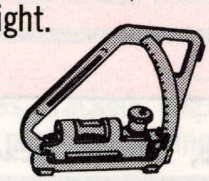
DIALS (ELEVATION COUNTER, CORRECTION) — Not readable; cracked.

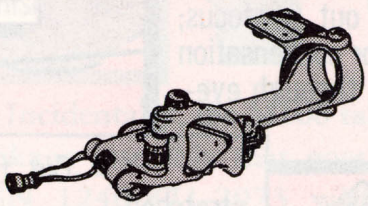
VIALS (CROSSLEVEL, ELEVATION COUNTER) — Mounting loose; glass cracked, scratched; markings hard to see; bubbles divided; level vial bubble not centered within one gradation.

ELECTRICAL RECEPTACLES AND CONTACTS — Contact pins bent, loose; contacts dirty, rusty.

LAMP COVER — Missing, busted; chain broken, not attached.

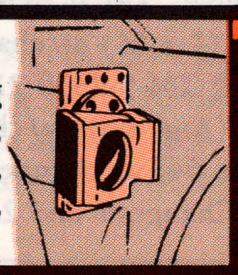
M1 AND M1A1 GUNNER'S QUADRANT — Frame bent; elevation scale loose, hard to read, damaged; level vial loose, dirty, cracked; bubble divided; micrometer adjusting knob cracked, loose, won't turn and hold tight.





M146 TELESCOPE MOUNT (T206) — Mounting screws loose; mounting surfaces corroded, rusty; tapered king pin loose, worn, chain busted, missing; cable loose, frayed; grounding wire loose, busted; connector arm, yoke and elevation bracket nicked, burred; electrical connector damaged; elevation slide cover loose, broken; elevation and deflection (azimuth) knobs busted, won't turn and hold right.

M42 OFFSET PERISCOPE (M109 only) — Mounting screws loose, missing; window dirty, cracked, fogged; dowel pins bent, burred, won't work.



M15 Elevation Quadrant (T23E2)

HAND LIGHT — Won't work; cable frayed, busted.

COUNTER WINDOWS — Dirty, condensation; cracked, scratched.

LAMPS — Won't light when toggle switch is on.

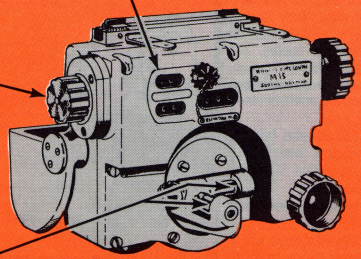
KNOBS (CORRECTION, ELEVATION COUNTER) — Busted; won't turn freely throughout range; won't change readings correctly on registers.

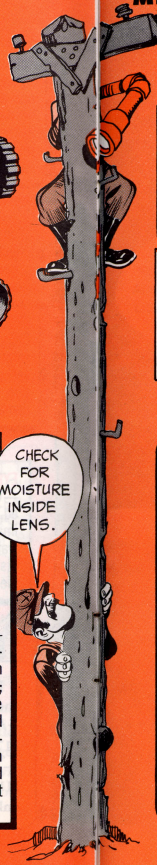
DIALS (ELEVATION COUNTER, CORRECTION) — Not readable; cracked.

VIALS (CROSSLEVEL, ELEVATION COUNTER) — Mounting loose; glass cracked, scratched; markings hard to see; bubbles divided; level vial bubble not centered within one gradation.

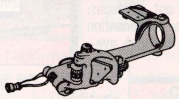
ELECTRICAL RECEPTACLES AND CONTACTS — Contact pins bent, loose; contacts dirty, rusty.

LAMP COVER — Missing, busted; chain broken, not attached.



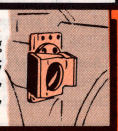


M1 AND M1A1 GUNNER'S QUADRANT — Frame bent; elevation scale loose, hard to read, damaged; level vial loose, dirty, cracked; bubble divided; micrometer adjusting knob cracked, loose, won't turn and hold tight.



M146 TELESCOPE MOUNT (T206) — Mounting screws loose; mounting surfaces corroded, rusty; tapered king pin loose, worn, chain busted, missing; cable loose, frayed; grounding wire loose, busted; connector arm, yoke and elevation bracket nicked, burred; electrical connector damaged; elevation slide cover loose, broken; elevation and deflection (azimuth) knobs busted, won't turn and hold right.

M42 OFFSET PERISCOPE (M109 only) — Mounting screws loose, missing; window dirty, cracked, fogged; dowel pins bent, burred, won't work.



M118 and M118C Elbow Telescope (T176E2, T176E3)

RETICLE SELECTION LEVER—Lever busted, won't engage detents.

GENERAL APPEARANCE—Eyepiece arm and main housing dented, scratched; mounting screws loose, missing (check all eight of 'em, too); mounting surfaces scratched, rusty, burred.

EYEPIECE—Rubber shield cracked, brittle; lens cracked, scratched, dirty, fogged up, covered with fungus.

LEVEL VIAL MIRROR—Busted, cracked.

LEVEL VIAL—Tube broken, cracked, loose; scale hard to read.

LIGHT CONTROL KNOB (RHEOSTAT)—Knob busted, cracked; won't light lamps; won't change light intensity as knob's turned; no positive action at the end of the range.

CANT CORRECTION (CROSSLEVEL) KNOB — Broken, cracked; won't work right.

ARM RELEASE LEVER — Won't move easy from stop to stop; plungers damaged.

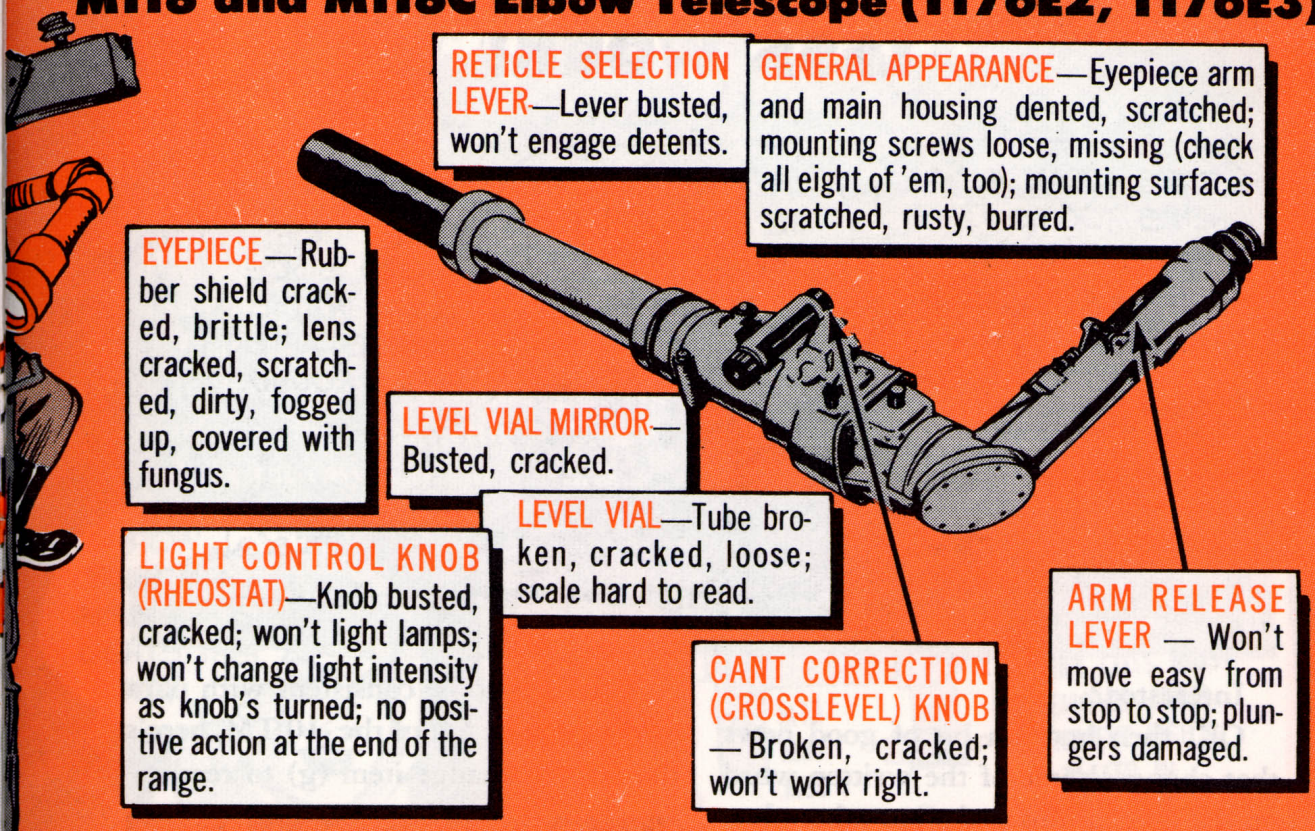
NOW, THOSE MWO'S

Here's a list of MWO's good through Aug 1966. Make sure your howitzer has all that's coming to it.

MWO Number	Dated	Priority	Echelon	SP Applicable	MWO Title
9-2350-217-20/1	21 Apr 65	N	2	Both	Installation of panoramic telescope (M117) stowage box bumper.
9-2350-217-20/2	19 Mar 65	N	2	Both	Re-shaping radiator and fuel cap cover locking pins.
9-2350-217-20/3	7 Apr 65	N	2	M109 only	Installation of rammer solenoid plunger guard.
9-2350-217-30/1	25 Nov 63	N	3	Both	Relocation of tow cable bracket.
9-2350-217-30/2	3 May 65	N	3	Both	Installation of improved anchor for commander's cupola cover spring.
9-2350-217-30/3	24 May 65	N	3	Both	Installation of improved headlight mounting.
9-2350-217-30/2/1	4 Aug 66	N	3	M109 only	Providing water drain hole in cradle.

END

M118 and M118C Elbow Telescope (T176E2, T176E3)



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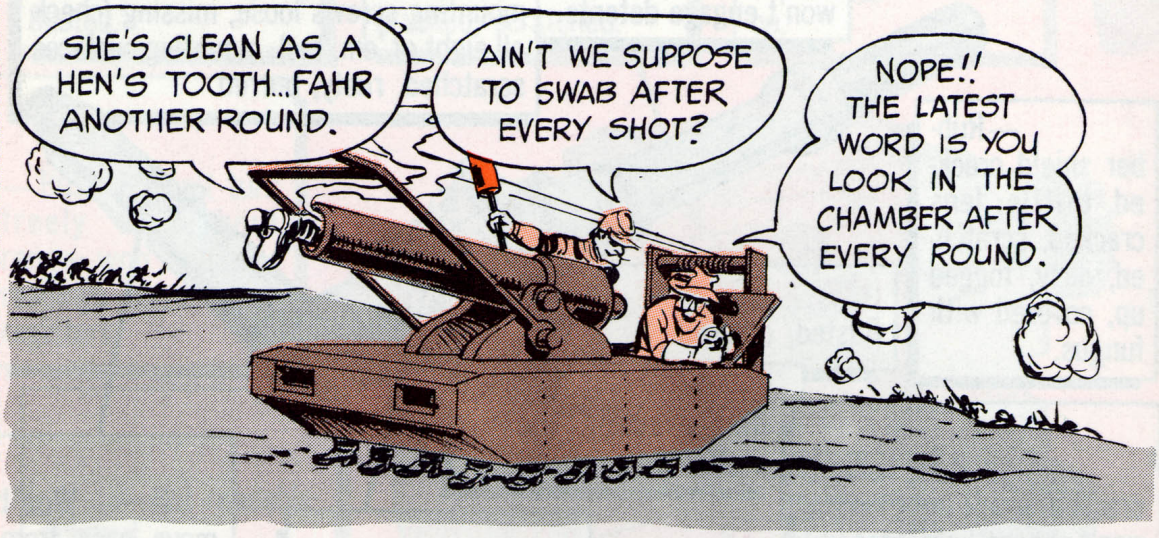
LESS WORK!



Interested?

OK, then here's a bit of good news that changes some of the written word on the precautions and steps taken during firing of the 165-MM gun on your M728 CEV.

Start with the Preliminary Step 7, Fig 2-62, in TM 9-2350-222-10 (Aug 65): The Note info after Item 7 gets changed, like so:

> The gun tube chamber area should be visually inspected and any debris found in the tube removed prior to loading the next round.

Now, so's to be consistent with para 4-31 (g), page 4-4 of the -10 TM, here's the way to change item (g) to read:

> After each round is fired, visually inspect the gun tube chamber. Remove any debris which will not permit the next round to chamber.

During firing activities, there is **no** requirement to clean out the complete gun tube — one end t'other — just 'nuff so the round'll chamber.

This **latest** word on firing poop is TT 38248 (Nov 66) from the U. S. Army Weapons Command.

AMMO PUBS CHECK

DA Form 2028, Recommended Changes to DA Publications, is OK for reporting errors in publications covering missile ammo, components, and explosives. But, for correcting publications on nuclear weapons and conventional ammo you use DA Form 2415, Ammunition Condition Report, like it says in para 5-6k, Change 2, TM 38-750.

Forms correcting classified pubs, of course, you handle like it says in para 1-10 and para 5-5, in TM 38-750.

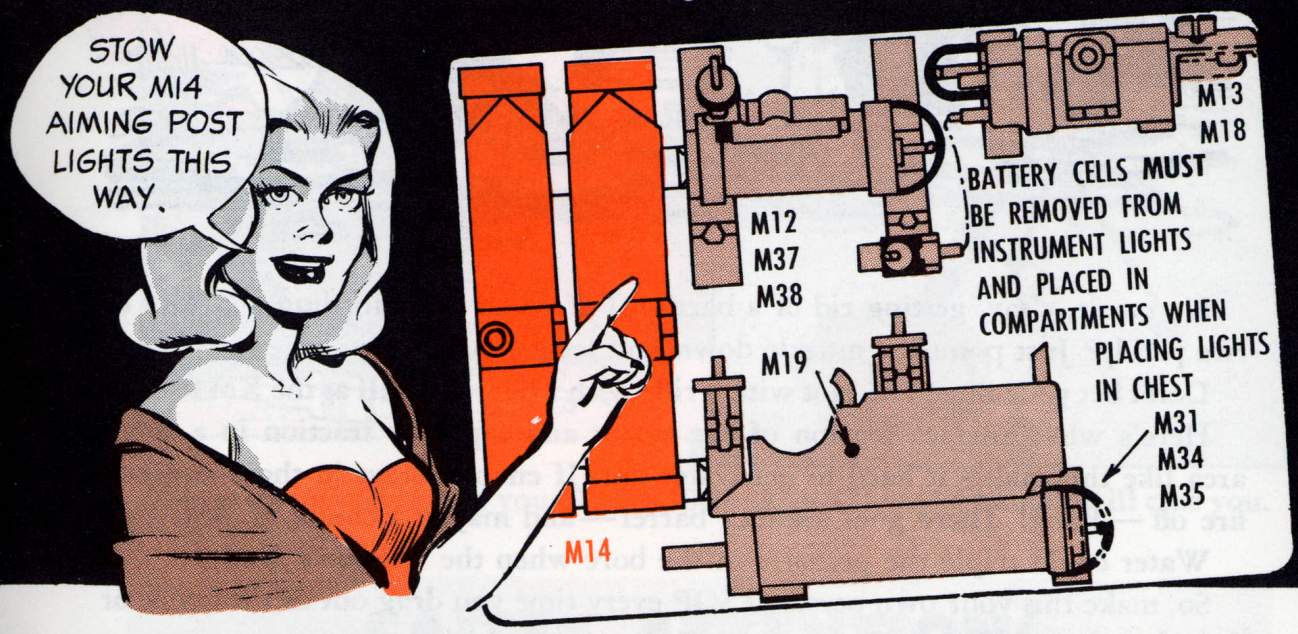
SEE THE LIGHT?

You artillery guys having conniption fits as you try to close the cover on your M21 lighting equipment chest—even though you follow the stowage diagram inside the cover to the letter?

That diagram is probably the cause of your trouble.

It shows the M14 aiming post lights laid out in a way that has the padded bracket in the cover getting in the way of the clamps on the lights.

Take the easy way out . . . turn the lights end-for-end.

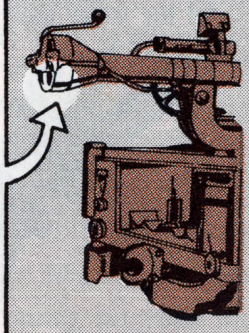


GOT A HAPPY TRIGGER?

Hey, Gunner, open the breechblock of your M40-A1 106-MM recoilless rifle a minute and see that it's got the right trigger on it, will you?

If the sear end of the trigger looks like this, fine. It's OK.

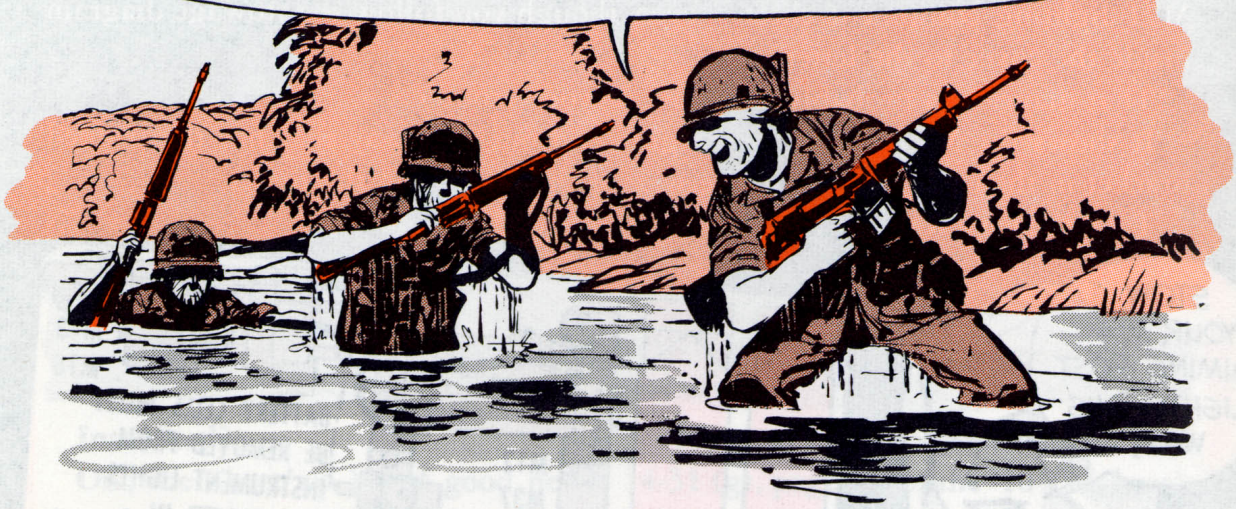
But, if it's been machined to look like this, get your armorer to replace it pronto. FSN 1015-300-5390 will fetch the right one.



These oldies could cause odd things to happen . . . like the rifle firing off when you close the breech.

XM16E1 SHARPSHOOTERS,
MAKE THIS YOUR SOP . . .

DRAIN BEFORE SHOOTING



No sweat, y'say, getting rid of a barrelful of water after fording a stream or rice paddy? Just point the muzzle down and let it drain, y'say?

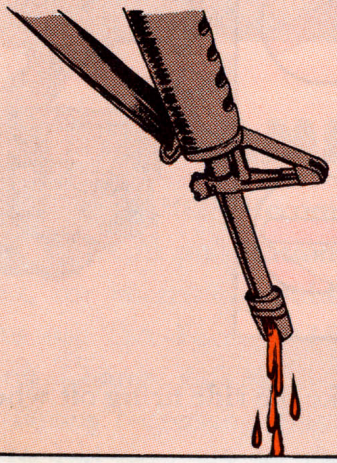
Don't bet your life on it! Not with a rifle with a bore as small as the XM16E1's!

Here's why: Surface tension of the water and capillary traction in a small area like this makes it hard to get water out. If enough stays in there and you fire off — Bang! There goes another barrel — and maybe a chunk of you.

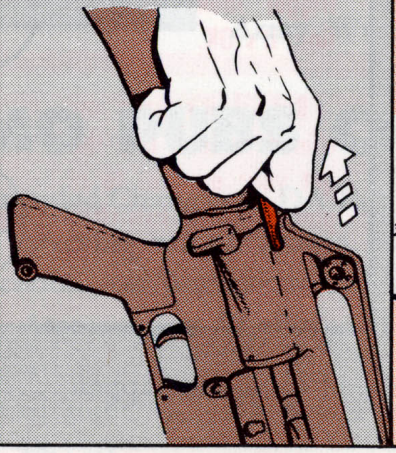
Water could triple the pressure in the bore when the weapon's fired.

So, make this your own personal SOP every time you drag out of the drink or fight in a heavy rain in Charleyland. Before you fire that weapon:

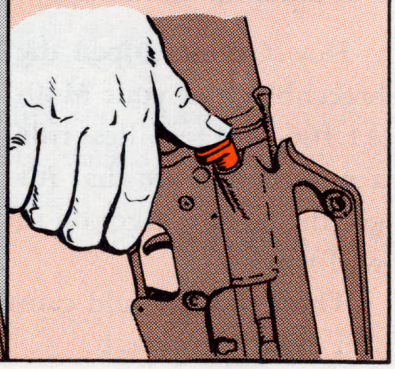
1. Point the muzzle down and let the water drain out.



2. Pull the charging handle back a mite.



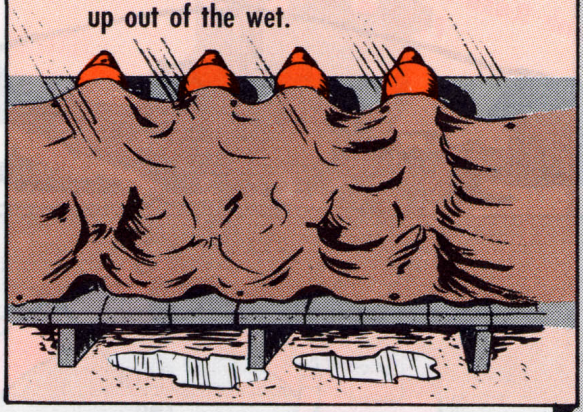
3. Press the forward assist to make sure the round is seated in the chamber and the bolt is locked.



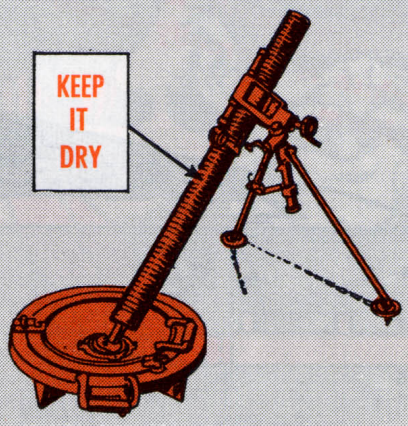
WATER . . . MORTAR . . . UGH!

No rhyme or reason for a short round with the M29-series 81-MM mortar—even in monsoon and rice paddy country—if you remember 2 important things:

1. Keep your ammo dry—especially the propellent and ignition system—by keeping it covered with a tarp or some-such and up out of the wet.

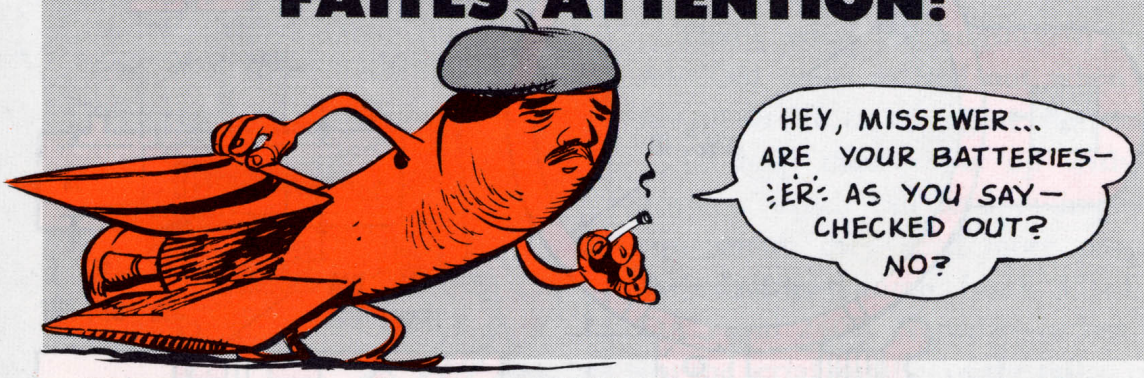


2. Dry out the tube every time it gets doused.

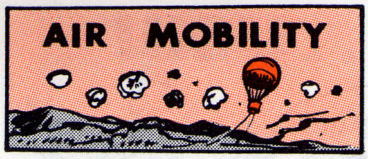


Paras 70 and 58b(1) of your TM 9-3064 (Aug 57) w/3 Changes will clue you.

FAITES ATTENTION!



Oui, never get caught short of CIPEL batteries for your M22 subsystem's wire-guided missiles. Check the expiration date on every battery on your shelf and order replacements (FSN 6135-884-7897) at least 4 months before they run out . . . so's they'll have plenty of time to get with you. And, remember, never use any battery that's passed its expiration date unless it checks out OK (registers 12 to 15 volts) on your GM battery tester.



LATCH ONTO

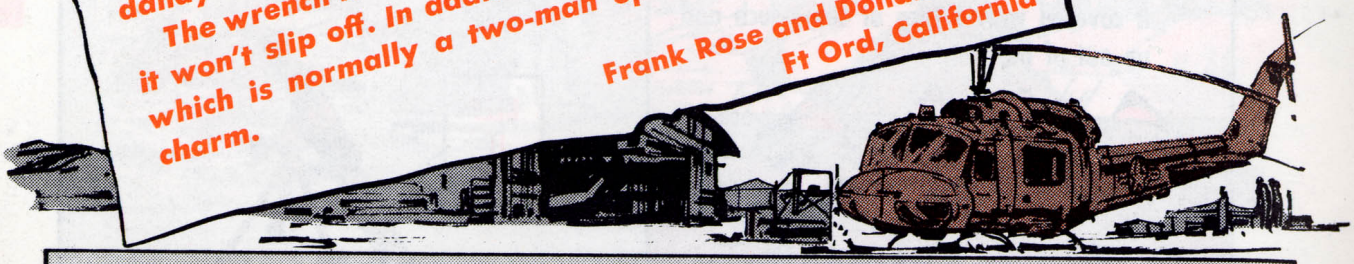
Dear Windy,

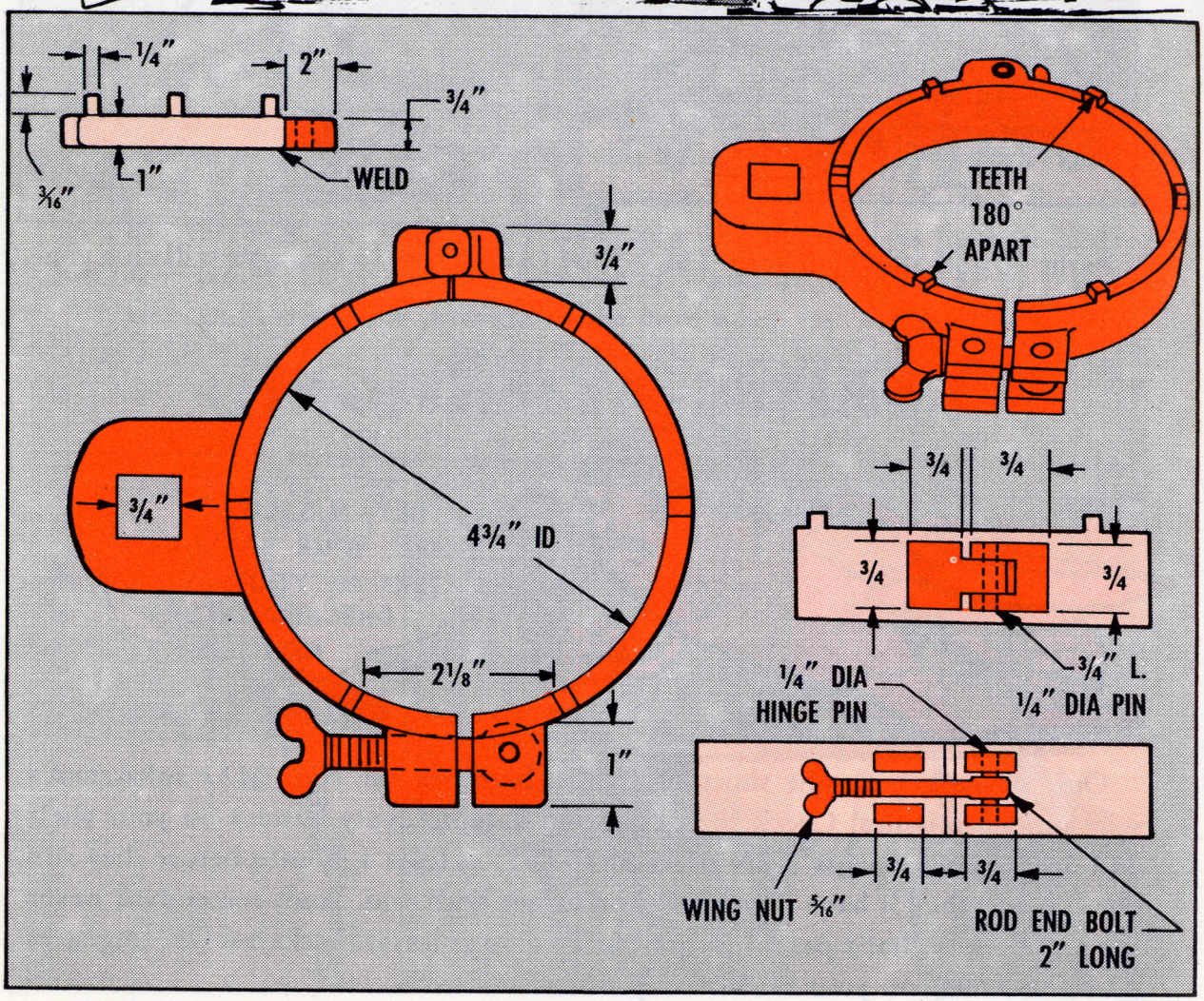
We had a rough time trying to torque the collective friction nut on the Huey (UH-1C) 540 rotor system using the standard spanner wrench. It slipped off, damaged other parts and could have injured a mechanic.

Well—after a little figuring we came up with this jimdandy wrench made out of scrap material.

The wrench latches in place around the entire nut so that it won't slip off. In addition, one man can do the torquing which is normally a two-man operation. It works like a charm.

Frank Rose and Donald Engle
Ft Ord, California





AIR MOBILITY

LATCH ONTO THIS WRENCH

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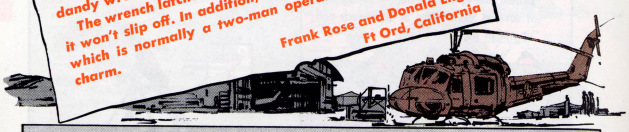
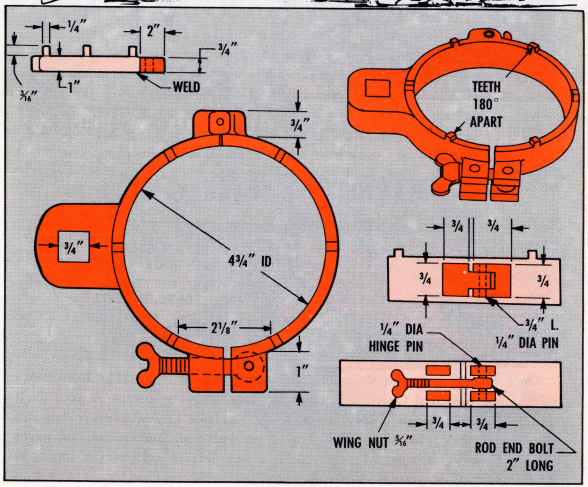
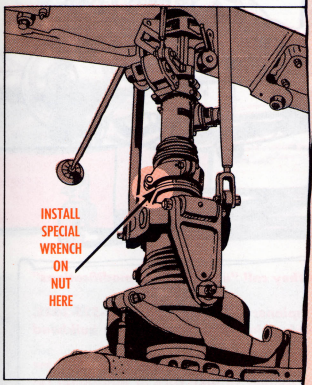
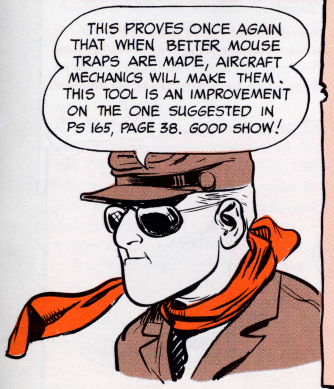








GO ONE STEP FURTHER

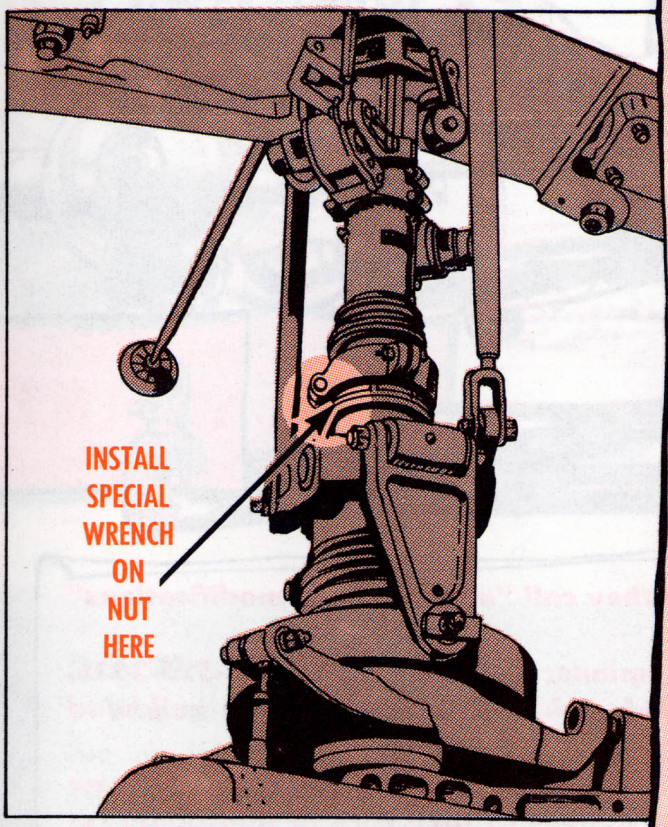
Wha 'hoppin?

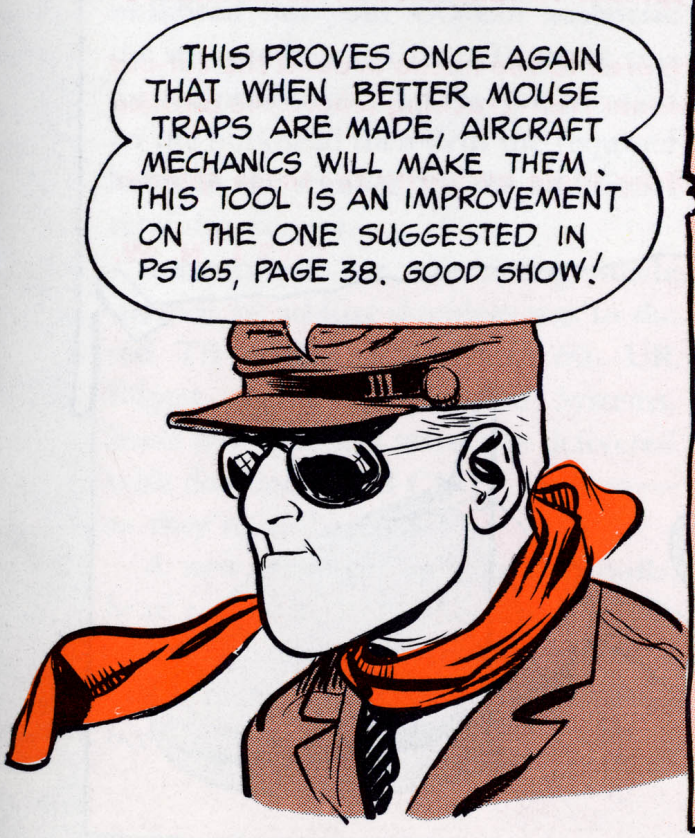
That's what the engineer-types at AVCOM want to find out when you fire off an EIR on an engine component.

To help them come up with the answer, which can lead to improved equipment, they need more poop in the remarks column, block 35 of the DA Form 2407. Namely—when you list the serial number of the failed part, also include the engine serial number.

Also, be sure that you list the aircraft serial number in block 2—if available.

THIS WRENCH





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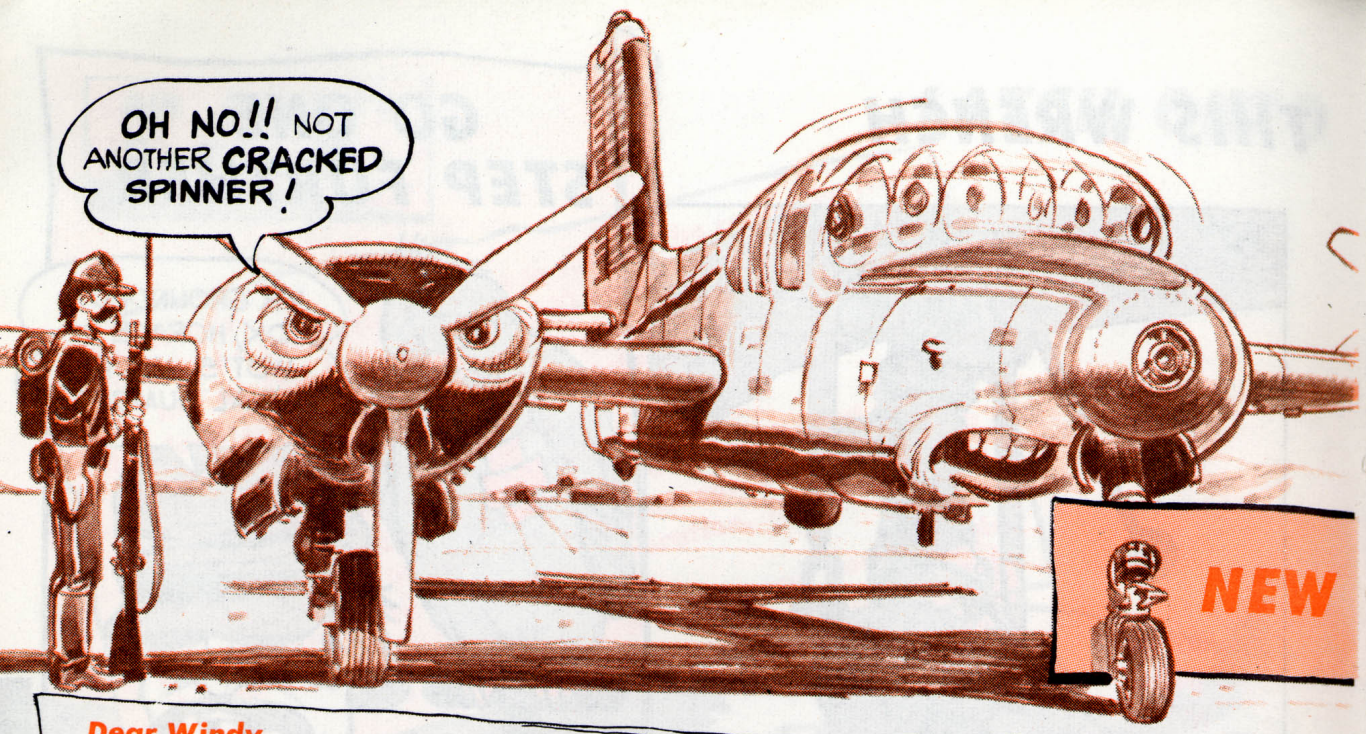


Dear Windy,

Our TI's have us in a spin over what they call "unauthorized modifications" to our Seminole (U-8) prop spinners.

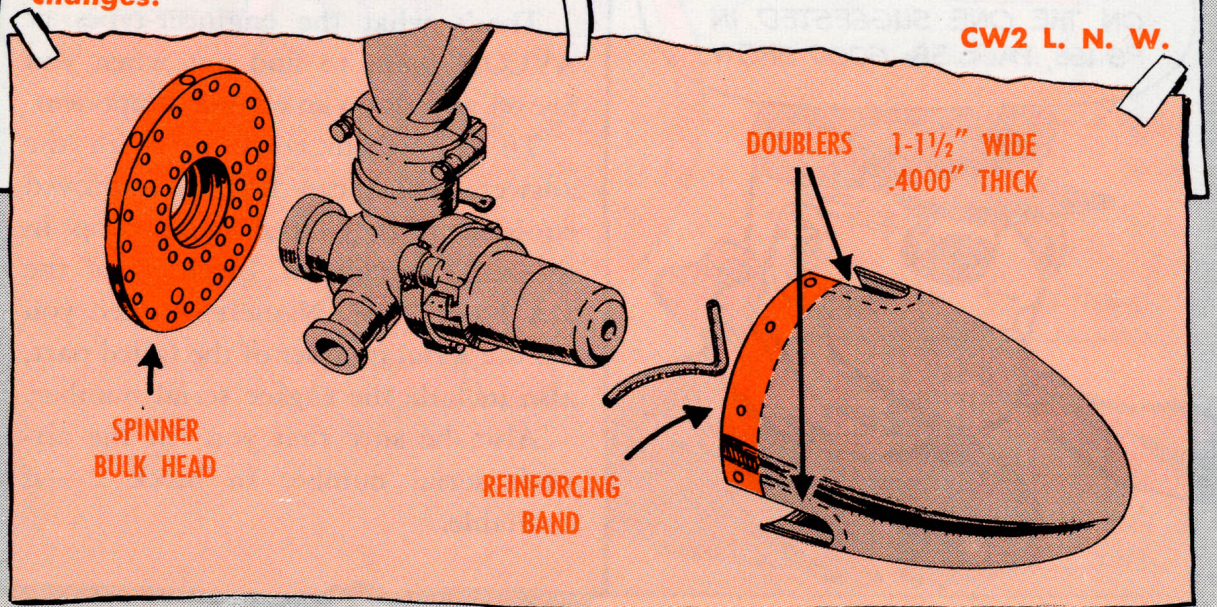
First, we ordered a new modified spinner bulkhead, FSN 1610-525-2036, P/N D1414-7, which came with a 4-in wide reinforcing band to stop bulkhead cracking.

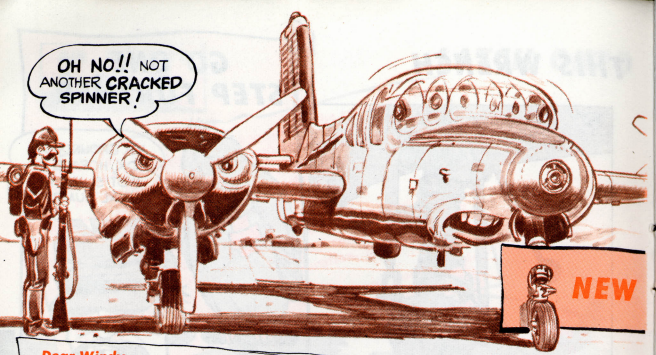
But, to put our old spinner, FSN 1610-624-6855, P/N D1367-2, on this new bulkhead we need to drill holes in the spinner to take care of additional retaining screws.

Also, our spinners have a doubler, riveted to the inside around the cut-out area for the blade shank, to keep the spinner from cracking where the anti-ice tubes are fastened to it.

Can you square us with our TI's by citing some authority for these spinner changes?

CW2 L. N. W.





NEW SPINNER DEAL

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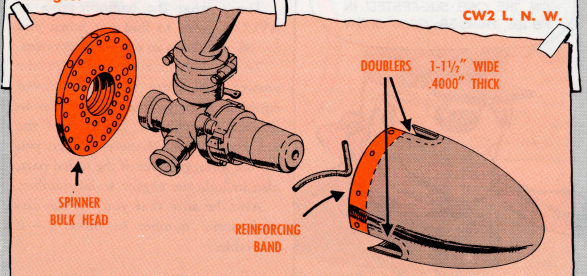


Dear Mr. L. N. W.,

You won't find any written word for modifying the D1367-2 spinner assembly to make it fit the D1414-7 bulkhead but your CO can authorize the spinner hole drilling. To make this fix you need to pick up the hole location on the bulkhead then drill the required holes in the spinner for the additional retaining screws.

Instructions for reinforcing blade cut-outs by adding doublers was in the old TB AVN 23-5-1 (Mar 60) UR Digest, on Accessories and Systems. Some new spinners were also delivered with doublers, P/N C1411, in them—so they're authorized.

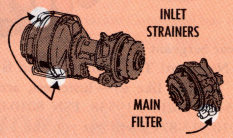
A new, stronger spinner and bulkhead assembly, P/N 836-21S, is in the works . . . one that should end this "tired metal" problem that has always been with us.

Windy

KEEP IT FLOWING, MAN!

Oil keeps the wheels turning—if the right amount gets to the right places.

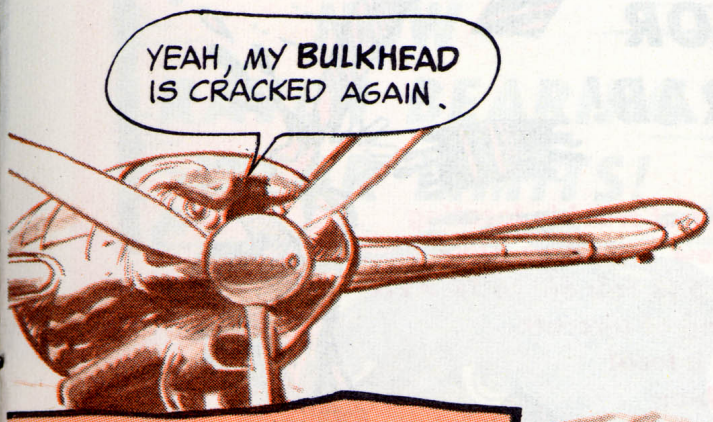
Take the No. 2, No. 3 and No. 4 main bearings in your Huey (UH-1) T-53 engine. If the oil filter or 2 oil strainers get clogged, the oil flow to the turbine wheel bearings is going to be reduced and you may wind up with overheated bearings. You know what that



means . . . seized bearings and (ugh!) a kaput engine.

Small wonder Ch 1 (5 Aug 66) to TM 55-1520-210-20PMI and TM 55-1520-211-20PMI now calls for the more frequent cleaning of the filter and strainers.

All the cleaning poop for the filter and strainers is right in the Huey organizational maintenance pub.



SPINNER DEAL

Dear Mr. L. N. W.,

You won't find any written word for modifying the D1367-2 spinner assembly to make it fit the D1414-7 bulkhead but your CO can authorize the spinner hole drilling. To make this fix you need to pick up the hole location on the bulkhead then drill the required holes in the spinner for the additional retaining screws.

Instructions for reinforcing blade cut-outs by adding doublers was in the old TB AVN 23-5-1 (Mar 60) UR Digest, on Accessories and Systems. Some new spinners were also delivered with doublers, P/N C1411, in them—so they're authorized.

A new, stronger spinner and bulkhead assembly, P/N 836-21S, is in the works . . . one that should end this "tired metal" problem that has always been with us.

Windy

KEEP IT FLOWING, MAN!

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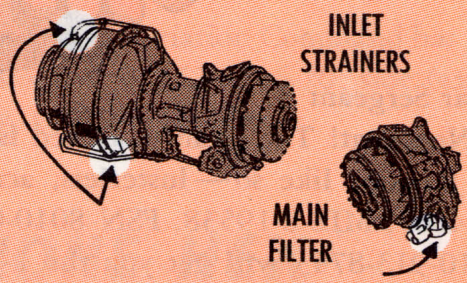

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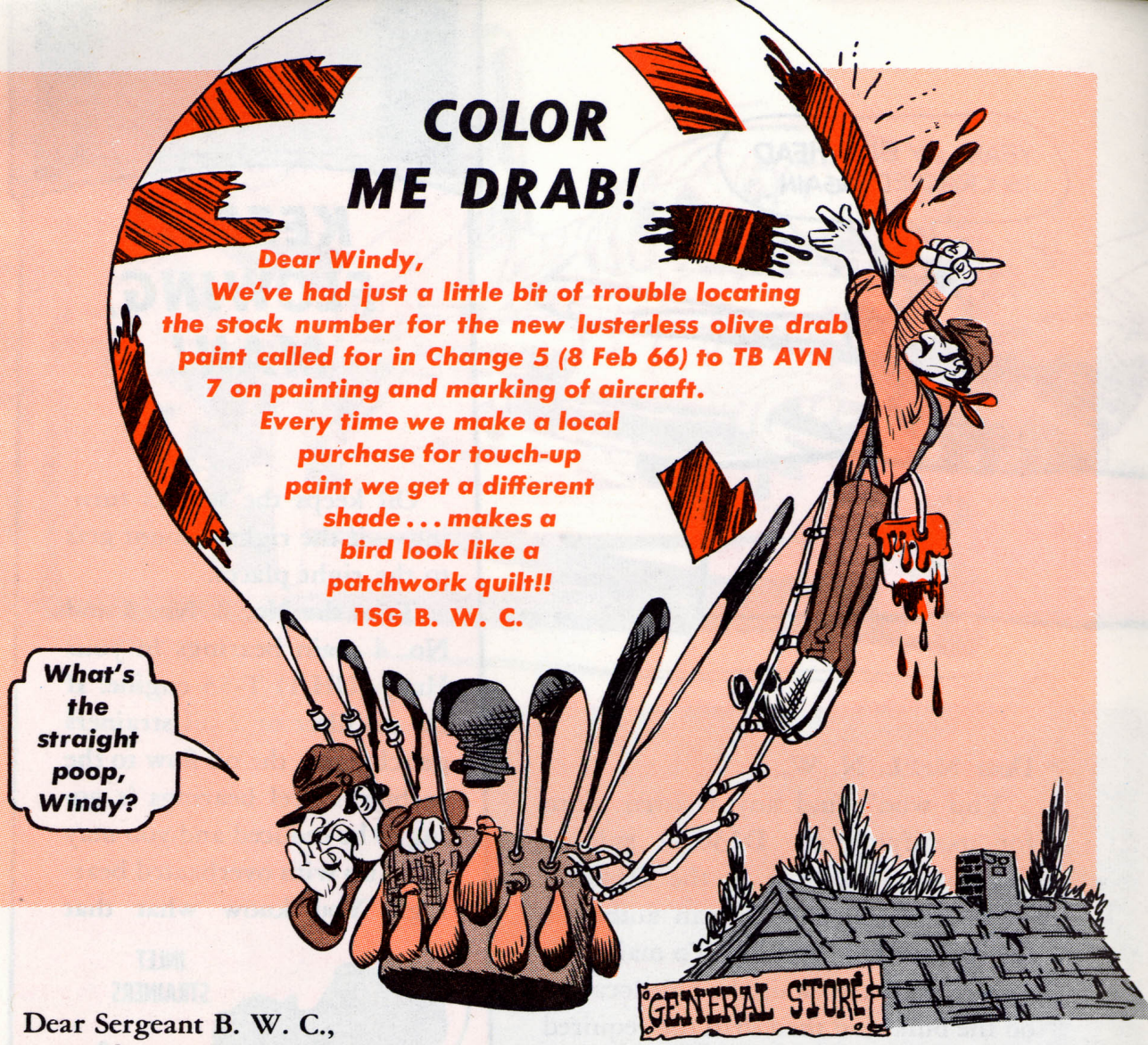
COLOR ME DRAB!

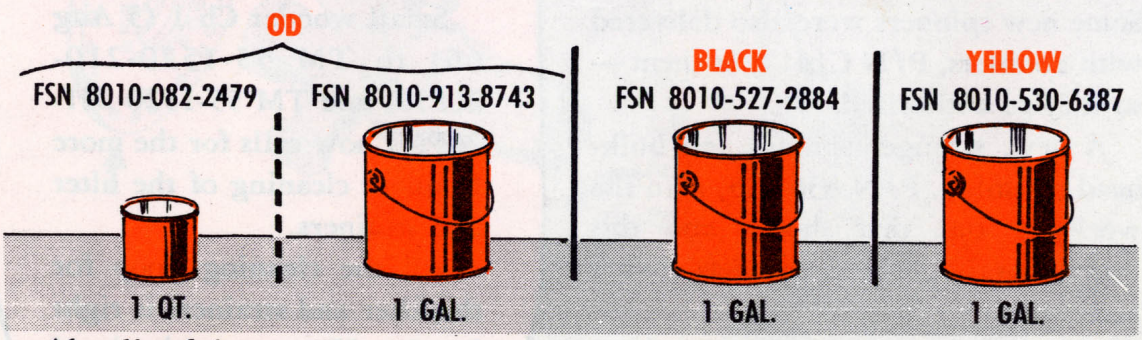
Dear Windy,
We've had just a little bit of trouble locating the stock number for the new lusterless olive drab paint called for in Change 5 (8 Feb 66) to TB AVN 7 on painting and marking of aircraft. Every time we make a local purchase for touch-up paint we get a different shade . . . makes a bird look like a patchwork quilt!!
1SG B. W. C.



Dear Sergeant B. W. C.,

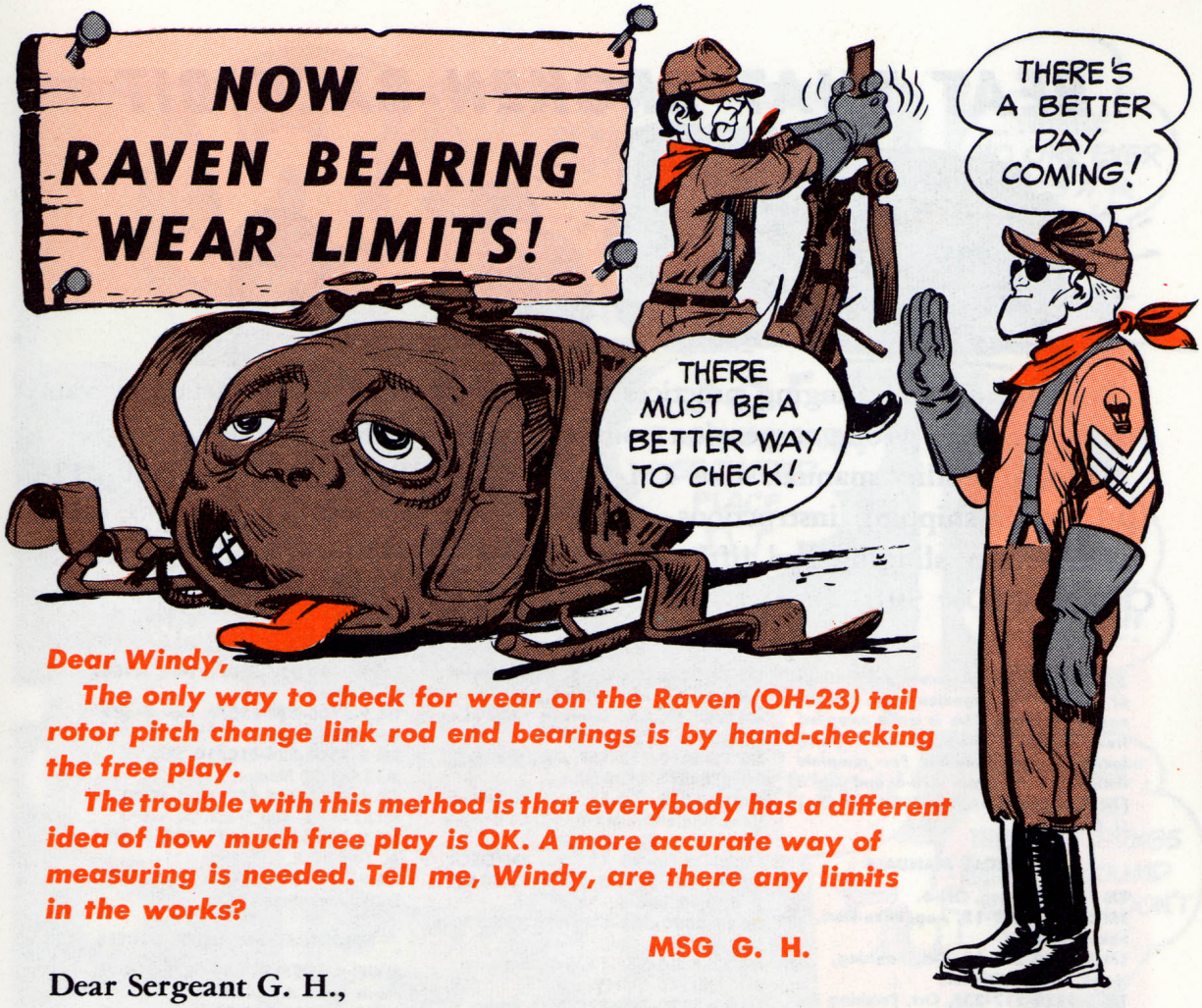
No sweat! The paint you need is listed on Page 19 of Fed Cat C8000-IL-A (1 Jan 66) like so—lusterless, acrylic, nitrocellulose type, olive drab, shade X34087, MIL-L-19538. FSN 8010-082-2479 will get you the 1-qt can and FSN 8010-913-8743 will get you the 1-gal can.

You'll also need black lusterless acrylic lacquer for lettering, which means you want shade 37038. FSN 8010-527-2884 handles the 1-gal cans.



Also listed is—yellow lusterless acrylic lacquer, shade 33538, for caution markings. FSN 8010-530-6387 gets you 1-gal cans.

Windy



Dear Windy,

The only way to check for wear on the Raven (OH-23) tail rotor pitch change link rod end bearings is by hand-checking the free play.

The trouble with this method is that everybody has a different idea of how much free play is OK. A more accurate way of measuring is needed. Tell me, Windy, are there any limits in the works?

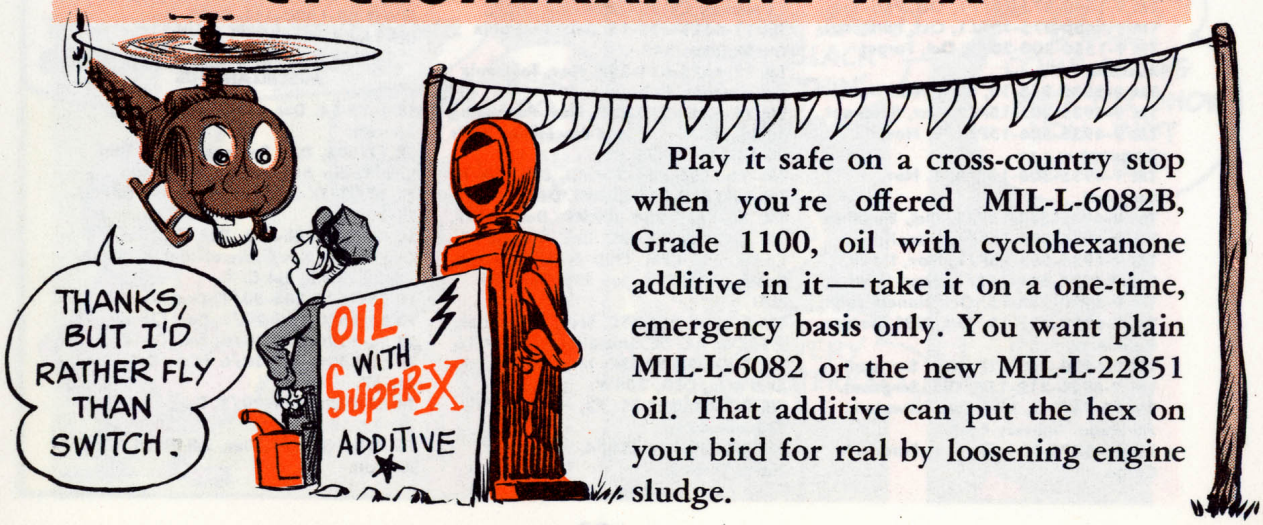
MSG G. H.

Dear Sergeant G. H.,

You must have a crystal ball or something . . . the Aviation Command has just come up with these limits, which will go into TM 55-1520-206-20: side (axial) play, 0.022-in maximum; end (radial) play, 0.005-in maximum.

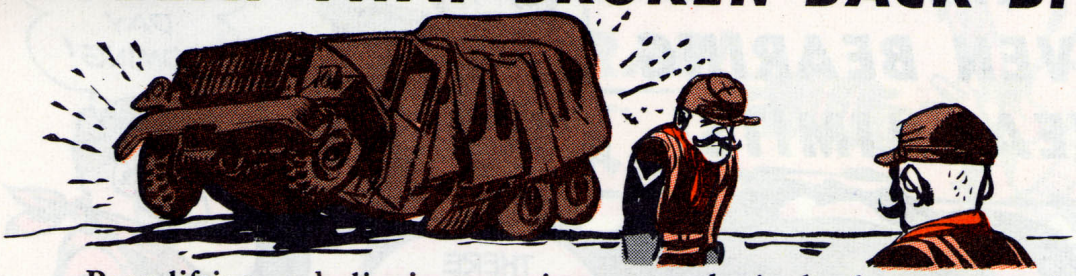
Windy

CYCLOHEXANONE HEX



Play it safe on a cross-country stop when you're offered MIL-L-6082B, Grade 1100, oil with cyclohexanone additive in it—take it on a one-time, emergency basis only. You want plain MIL-L-6082 or the new MIL-L-22851 oil. That additive can put the hex on your bird for real by loosening engine sludge.

BEAT THAT BROKEN-BACK BIT



Poor lifting and slinging practices can make junk of a cargo truck or van. Hoisting by the wrong suspension points can buckle a frame badly.

Transportability manuals like TM 55-2320-209-10-1 or TM 55-2320-211-10-1, cover shipping instructions—but not lifting techniques.

For proper slinging and lifting methods see TB 9-210/1 (Jul 59) and its Change 1 (Dec 59).

A selected list of recent publications of interest to Organizational Maintenance Personnel. This is a list compiled from recent Adjutant General's Distribution Center Bulletins. For complete details see DA Pam 310-4 and Ch 3 (14 Oct 66) and DA Pam 310-6 and Ch 1 (1 Oct 66).

TECHNICAL MANUALS

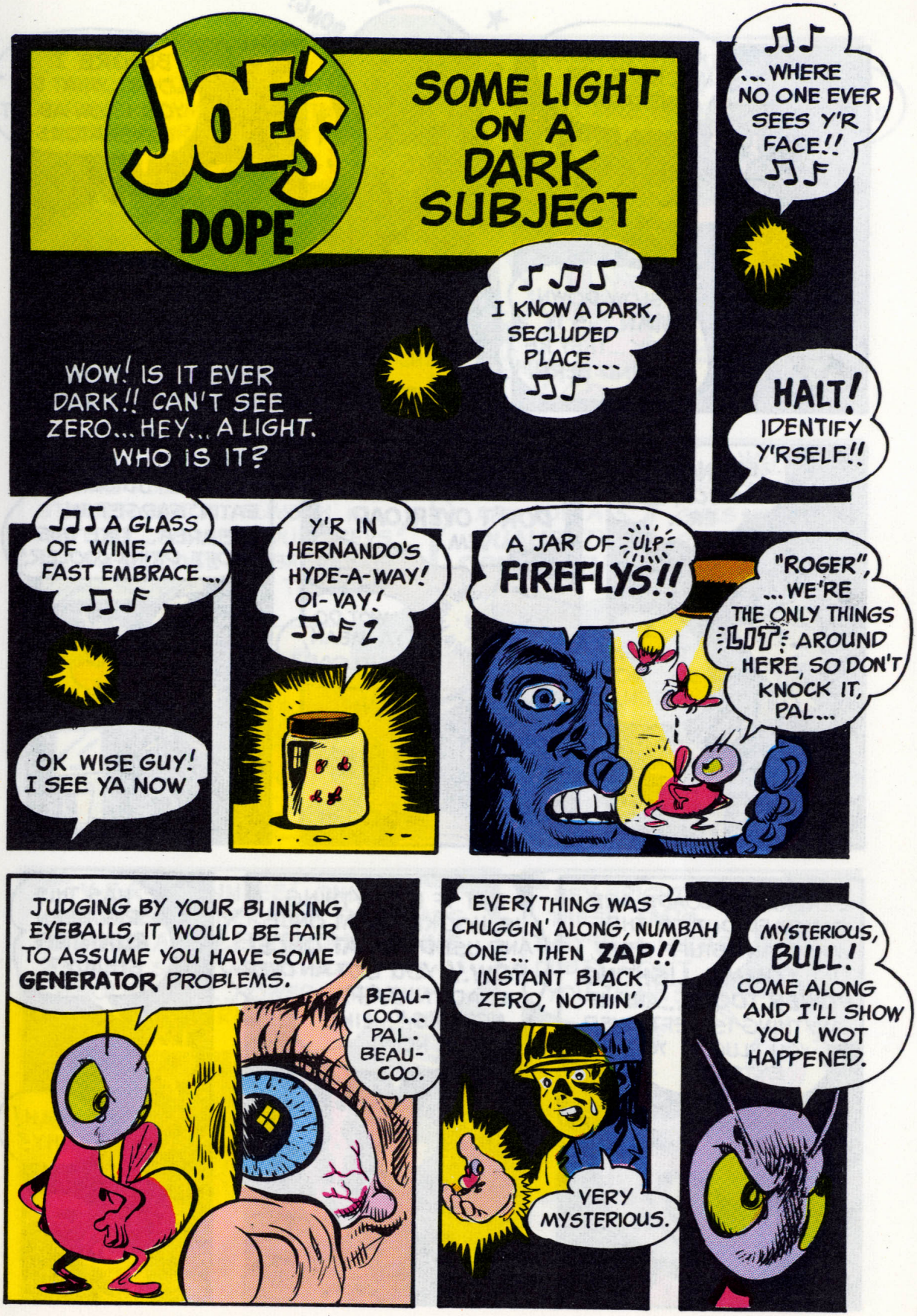
TM 1-OH6-5, Sep, OH-6.
TM 5-1450-201-15, Aug, Nike-Herc, Nike-Herc Imp.
TM 5-4120-210-15, Oct, Pershing, Hawk Air Conditioner.
TM 5-4120-217-25P, Oct, Pershing Air Conditioner.
TM 5-4310-214-25P, Nov, Nike-Herc, Nike-Herc Imp, Air Compressor.
TM 5-6125-206-25P, Oct, Nike-Herc, Nike-Herc Imp Motor-Generator-Power Supply.
TM 9-1190-205-15, Dec, Honest John, Little John.
TM 9-1430-250-15P/9/2, Oct, Nike-Herc.
TM 9-1430-502-15P/1, Oct, Hawk.
TM 9-1430-510-15P/1, Nov, Hawk.
TM 9-1440-375-12P/1, Oct, Pershing.
TM 9-1450-375-12P/1, Oct, Pershing.
TM 9-1550-200-20/3, Oct, Target Missiles.
TM 9-2330-255-14, Nov, Nike-Herc.
TM 9-4935-305-15P/2, Oct, Sergeant.
TM 9-4935-306-15P/2/1, Nov, Sergeant.
TM 9-4935-306-15P/4/1, Nov, Sergeant.
TM 9-4935-378-15P/1, Oct, Pershing.
TM 9-4935-500-15P/1, Nov, Hawk.
TM 9-4935-503-15P/1, Nov, Hawk.
TM 9-4935-504-15P/1, Nov, Hawk.
TM 9-6920-213-15, Oct, Honest John.
TM 9-6920-221-13, Oct, M31 Trainer, Field Arty.
TM 9-6920-310-12P, Nov, Sergeant.
TM 9-6920-312-15P, Oct, Sergeant.
TM 10-1670-1, Nov, Gen Literature. All Aerial Delivery Equip.
TM 10-1670-234-23, Sep, Parachute, Cargo.
TM 11-2300-360-15-1, Sep, Installing AN/VRC-12, AN/VRC-46, AN/VRC-47, AN/VRC-53, and Intercom AN/VRC-1 (V).
TM 11-5410-213-15P, Dec, Shelter, Elect Equip S-280A/G.
TM 11-5815-300-15, Nov, Signaling Unit, Single Circ MX-4460/G; Double Circ MX-4461A/G.
TM 11-5820-461-12, Oct, AN/GRC-50 (V) 1, 2, 3, 4, 5; AN/GRC-50A (V) 1, 2, 3, 4, and 5.
TM 11-5820-505-25P, Nov, Radio Term Set, AN/MRC-68A.
TM 11-5820-535-15, Sep, Repeater Set, AN/TRC-110 (V).
TM 11-5820-549-24P, Nov, Radio AN/PRT-4; Radio AN/PRR-9.
TM 11-5985-243-25P, Nov, Coupler, Antenna CU-1638/GR.
TM 11-5995-205-15, Dec, Cable Assy, CX-4245/G.
TM 11-6625-202-15, Nov, Detecting Set, Intrusion AN/PSR-1.
TM 11-6625-524-15-1, Nov, Voltmeter, AN/URM-145.
TM 11-6625-524-25P-1, Nov, Voltmeter, Electronic, AN/URM-145.
TM 11-6625-604-15, Nov, Frequency Converter, CV-394/USA-5.
TM 11-6625-611-15, Sep, Tektronix Oscilloscope 543.
TM 11-6625-611-25P, Nov, Tektronix Oscilloscope 543.
TM 11-6780-218-25P, Nov, Processing Equip PH-406, Photo Processing Units ES-20 (1), ES-20 (2).
TM 55-1510-204-20PMD, Dec, OV-1.
TM 55-1510-204-20PMI, Dec, OV-1.
TM 55-1510-204-20PMP, Dec, OV-1.
TM 5-4300-211-ESC, Dec, Rotary, Air, Comp, 250 CFM, ORD M-353 Chassis, Davey M250RPV, Jay RPV250DC20-MS1.
TM 5-6100-206-ESC, Nov, Generator, 0.15KW, AC, DC, Homelite 15AD12-16.
TM 5-6100-209-ESC, Nov, Generator, Skid Mtd, DED, 30KW.
TM 9-2300-224-ESC/3, Nov, M577 Command Post.
TM 9-2300-224-ESC/4, Nov, M132 Flame Thrower.
TM 9-2300-224-ESC/7, Nov, M106A1 SP Mortar.
TM 9-2300-224-ESC/8, Nov, M577 Command Post.
TM 9-2300-224-ESC/10, Dec, M125A1 SP Mortar.
TM 9-2320-218-ESC, Nov, M151, M151A1 ¼ Ton Truck.
TM 9-2320-244-ESC/1, Dec, M37B1 ¾ Ton Truck.
TM 9-2320-244-ESC/2, Dec, M43B1 Truck, Ambulance.

MODIFICATION WORK ORDERS

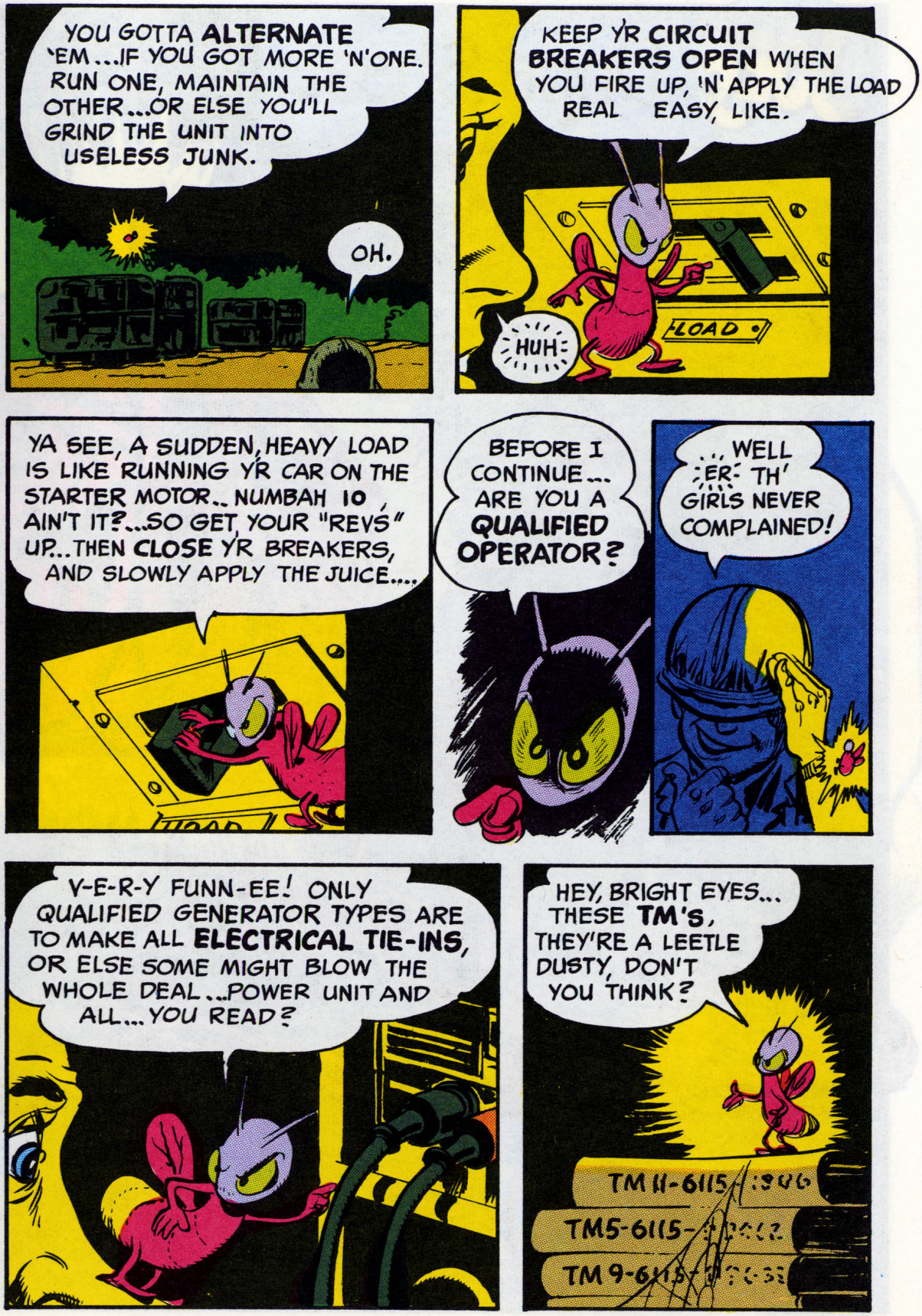
MWO 9-1005-224-30/2, Dec, M60 Mach Gun, M122 Mount.
MWO 9-1100-300-20/1, Dec, Sergeant.
MWO 9-1220-203-30/7, Nov, M60, M60A1 Tank.
MWO 9-2300-216-20/9, Dec, M107 Gun, M110 Howitzer.
MWO 9-2350-217-30/12, Dec, M109 Howitzer.
MWO 55-1510-204-30/1, Jan, OV-1.
MWO 55-1510-204-34/80, Nov, OV-1.
MWO 55-1520-209-30/27, Jan. CH-47.
MWO 55-1520-211-30/8, Dec, UH-1A-1B.

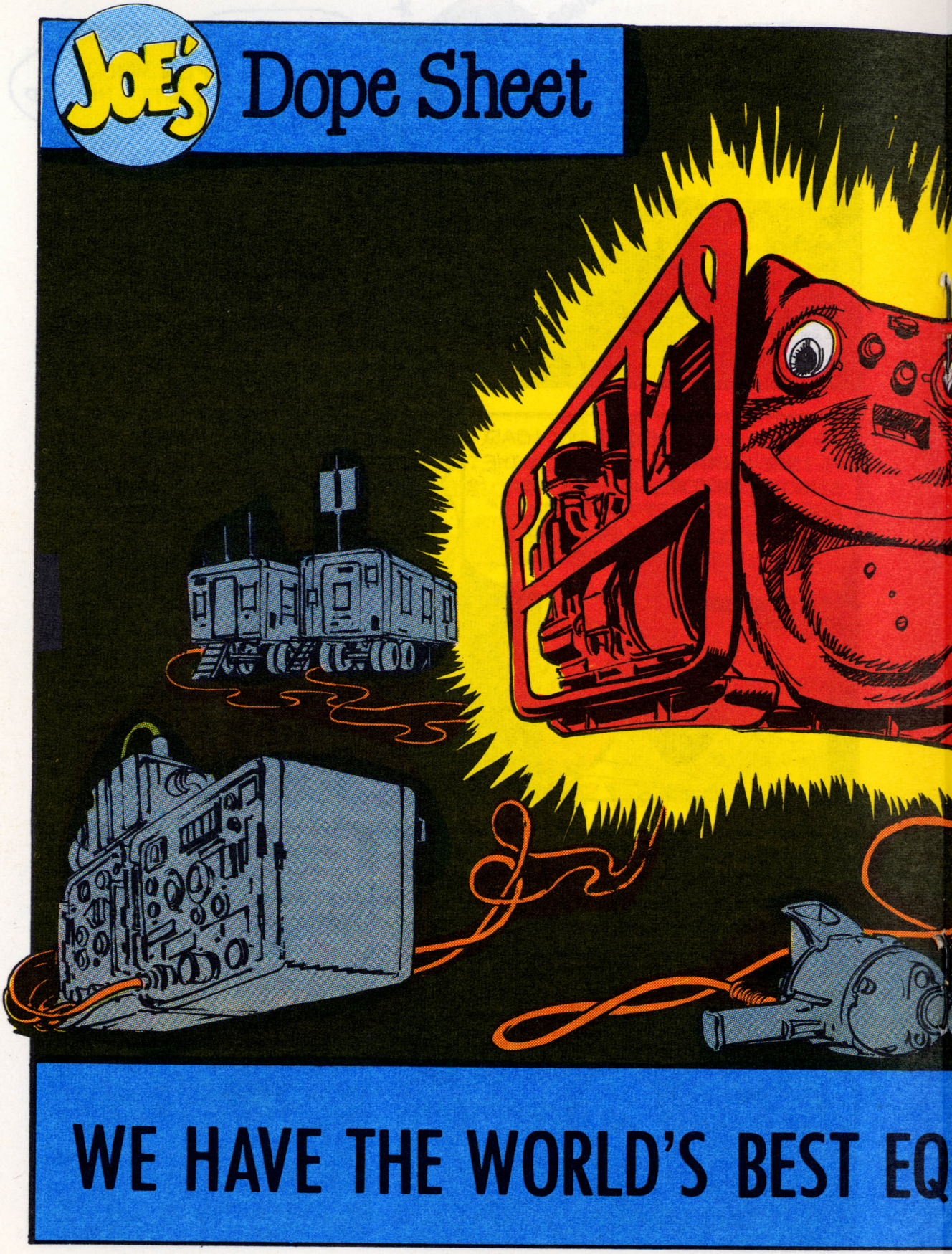
MISCELLANEOUS

SB 1-15-14, Dec, Fixed, Rotor Wing Aircraft.
SB 11-604, Dec, Replacement of Tool Kits, Radar And Radio, Repairman TK-87/U, TK-88U; w/Tool Kits-105/G, TK-100/G.
SC 4920-93-CL-A71, Dec, Tool Set, Org Maint Army Aircraft Set A, Set A (Sup), Set B, Set C.
TB 55-1510-205-30/1, Dec, U-1.
TB 55-1520-203-20/1, Dec, CH-37.
TB 55-1520-209-30/6, Jan, CH-47.
TB 55-1520-209-30/6 (Corr Cy), Jan, CH-47.
TB 55-1520-211-20/8, Dec, UH-1A-1B.
TB 750-931-1/1, Dec, All Fixed Wing Aircraft.

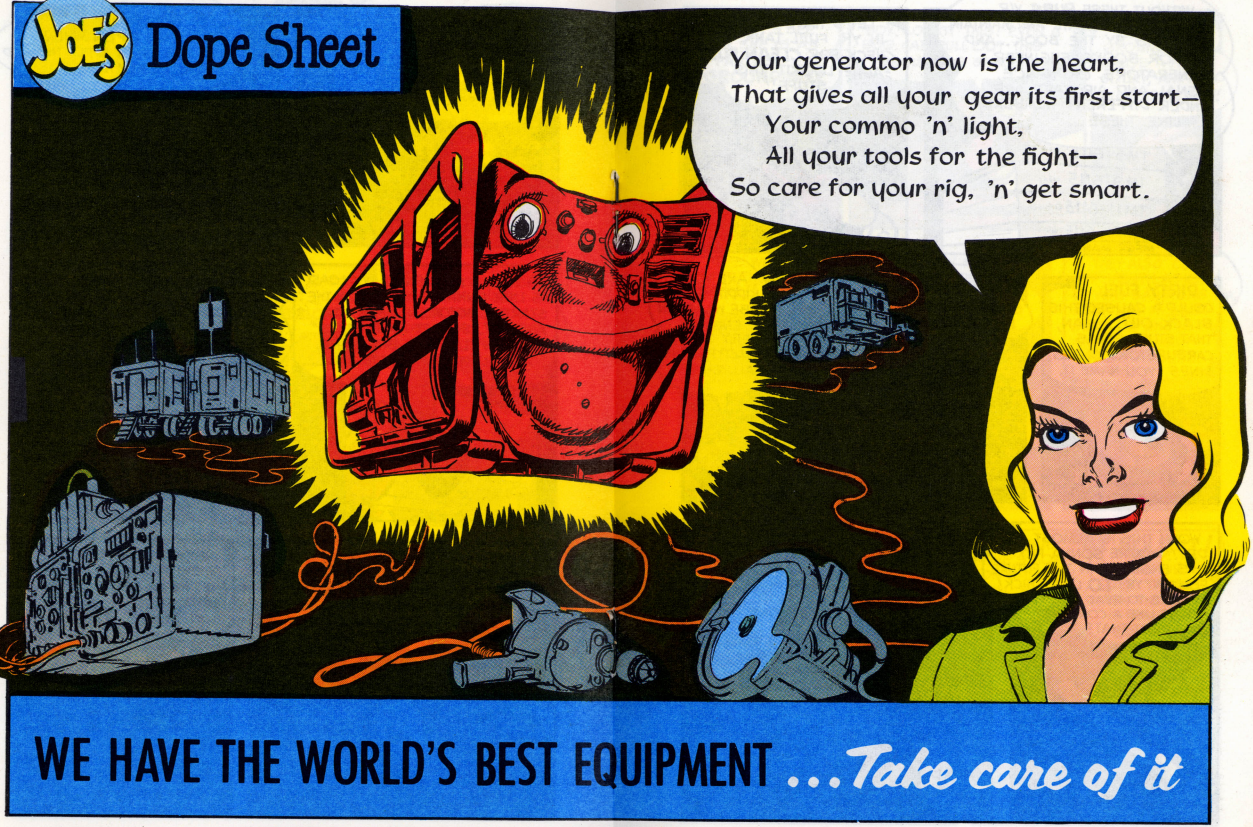

JOE'S DOPE
SOME LIGHT ON A DARK SUBJECT
WOW! IS IT EVER DARK!! CAN'T SEE ZERO... HEY... A LIGHT. WHO IS IT?
I KNOW A DARK, SECLUDED PLACE...
...WHERE NO ONE EVER SEES Y'R FACE!!
HALT! IDENTIFY Y'RSELF!!
A GLASS OF WINE, A FAST EMBRACE...
OK WISE GUY! I SEE YA NOW
Y'R IN HERNANDO'S HYDE-A-WAY! OI-VAY!
A JAR OF ULP FIREFLYS!!
"ROGER", ...WE'RE THE ONLY THINGS LIT AROUND HERE, SO DON'T KNOCK IT, PAL...
JUDGING BY YOUR BLINKING EYEBALLS, IT WOULD BE FAIR TO ASSUME YOU HAVE SOME GENERATOR PROBLEMS.
BEAU-COO... PAL. BEAU-COO.
EVERYTHING WAS CHUGGIN' ALONG, NUMBAH ONE... THEN ZAP!! INSTANT BLACK ZERO, NOTHIN'.
VERY MYSTERIOUS.
MYSTERIOUS, BULL! COME ALONG AND I'LL SHOW YOU WOT HAPPENED.

OK HAWK EYE... WHERE'S Y'R GENERATORS?
SLOW DOWN! MAN... IS IT DARK ...THEY'RE AROUND HERE.
BONG!
I THINK YOU FOUND 'EM...
BEFORE I LOOK...WHAT DO YOU KNOW ABOUT GENERATORS?
ER: NOT TOO MUCH, BUT, ER...
I THOUGHT SO... NOW LISTEN...
FIRST AND MOST IMPORTANT...YOU DON'T OVERLOAD 'EM.
WOT DO YA MEAN, OVERLOAD?
YOU DON'T HOOK IN EVERY JUICE-EATIN' GADGET IN THE AREA... LIKE THIS SOFT DRINK COOLER!
GENERATOR LOADS ARE PARCELED OUT TO THE IMPORTANT STUFF FIRST, LIKE COMMO. LIGHTING. POWER TOOLS...AND IF ANYTHING IS LEFT OVER... YOU PLUG IN YOUR EXTRAS.
BUT IF EVERYTHING IS HOOKED IN AT ONCE AND USED ALL AT ONCE! POW!! YOU GOT AN OVER-LOAD 'N' ZAP. NOTHING!!. LIKE NOW.
HAS THIS RIG BEEN RUNNING STEADY?
YEAH! WHY?


YOU GOTTA ALTERNATE 'EM...IF YOU GOT MORE 'N'ONE. RUN ONE, MAINTAIN THE OTHER...OR ELSE YOU'LL GRIND THE UNIT INTO USELESS JUNK.
OH.
KEEP YR CIRCUIT BREAKERS OPEN WHEN YOU FIRE UP, 'N' APPLY THE LOAD REAL EASY, LIKE.
HUH
LOAD
YA SEE, A SUDDEN, HEAVY LOAD IS LIKE RUNNING YR CAR ON THE STARTER MOTOR.. NUMBAH 10, AIN'T IT?...SO GET YOUR "REVS" UP...THEN CLOSE YR BREAKERS, AND SLOWLY APPLY THE JUICE....
BEFORE I CONTINUE... ARE YOU A QUALIFIED OPERATOR?
...WELL :ER: TH' GIRLS NEVER COMPLAINED!
V-E-R-Y FUNN-EE! ONLY QUALIFIED GENERATOR TYPES ARE TO MAKE ALL ELECTRICAL TIE-INS, OR ELSE SOME MIGHT BLOW THE WHOLE DEAL...POWER UNIT AND ALL... YOU READ?
HEY, BRIGHT EYES... THESE TM'S, THEY'RE A LEETLE DUSTY, DON'T YOU THINK?
TM 11-6115
TM5-6115-
TM 9-6



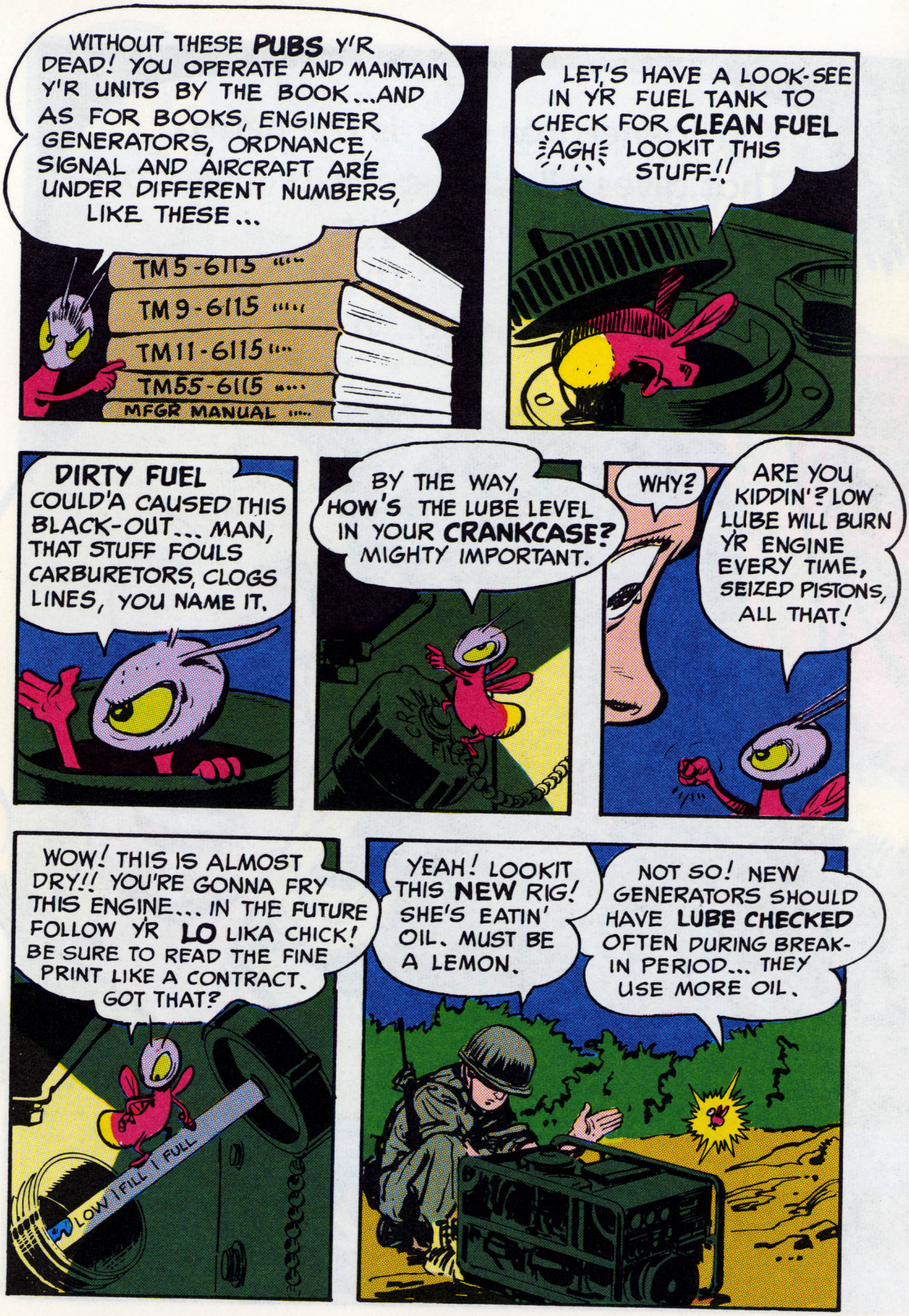
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULL



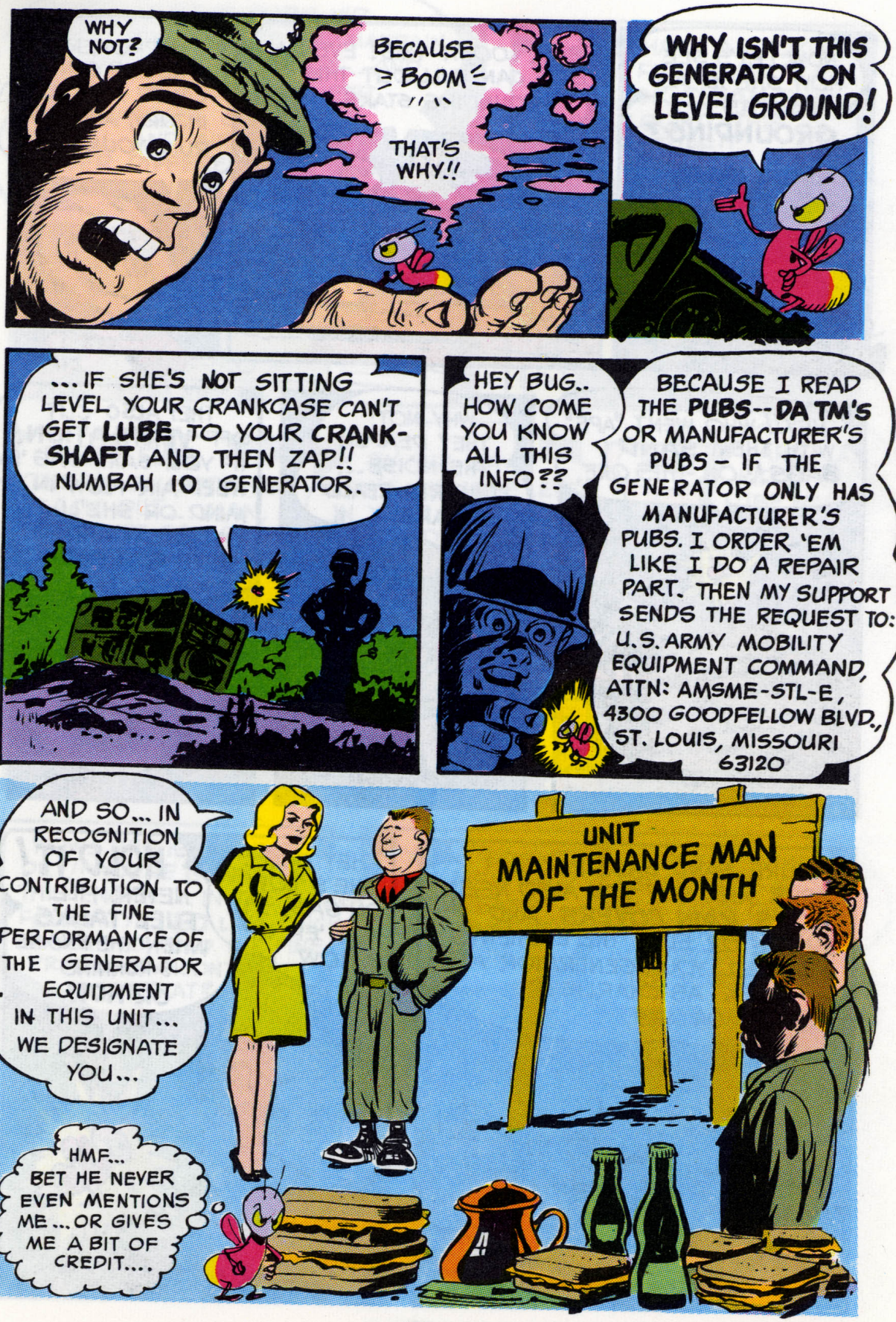
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

UIPMENT ...*Take care of it*

ETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

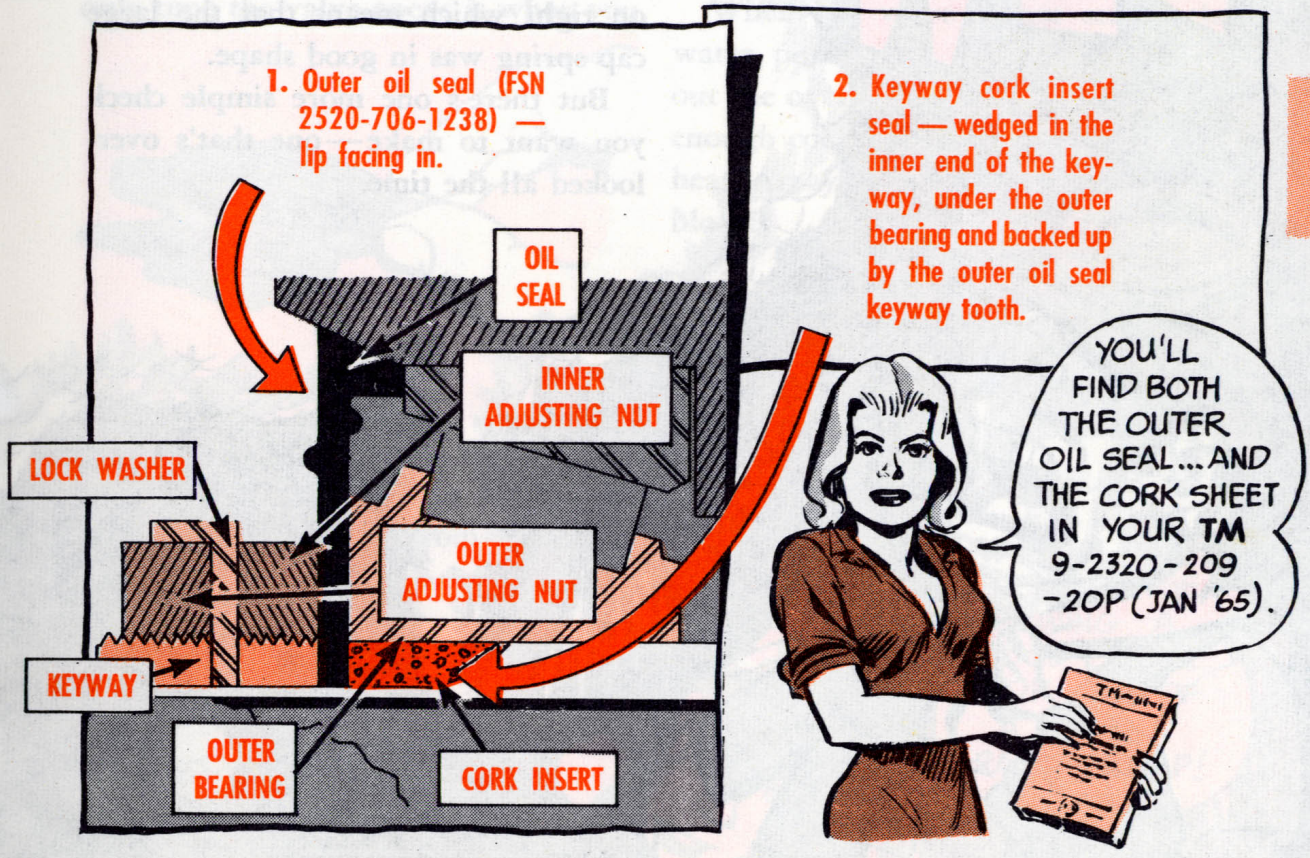

WITHOUT THESE PUBS Y'R DEAD! YOU OPERATE AND MAINTAIN Y'R UNITS BY THE BOOK...AND AS FOR BOOKS, ENGINEER GENERATORS, ORDNANCE, SIGNAL AND AIRCRAFT ARE UNDER DIFFERENT NUMBERS, LIKE THESE...
TM 5-6115
TM 9-6115
TM 11-6115
TM 55-6115
MFGR MANUAL
LET'S HAVE A LOOK-SEE IN YR FUEL TANK TO CHECK FOR CLEAN FUEL
AGH! LOOKIT THIS STUFF!!
DIRTY FUEL COULD'A CAUSED THIS BLACK-OUT... MAN, THAT STUFF FOULS CARBURETORS, CLOGS LINES, YOU NAME IT.
BY THE WAY, HOW'S THE LUBE LEVEL IN YOUR CRANKCASE? MIGHTY IMPORTANT.
WHY?
ARE YOU KIDDIN'? LOW LUBE WILL BURN YR ENGINE EVERY TIME, SEIZED PISTONS, ALL THAT!
WOW! THIS IS ALMOST DRY!! YOU'RE GONNA FRY THIS ENGINE... IN THE FUTURE FOLLOW YR LO LIKA CHICK! BE SURE TO READ THE FINE PRINT LIKE A CONTRACT. GOT THAT?
LOW | FILL | FULL
YEAH! LOOKIT THIS NEW RIG! SHE'S EATIN' OIL. MUST BE A LEMON.
NOT SO! NEW GENERATORS SHOULD HAVE LUBE CHECKED OFTEN DURING BREAK-IN PERIOD... THEY USE MORE OIL.

NOW, LET'S SEE HOW SHE IS AS FAR AS GROUNDING?
BOY! LOOKIT THIS! EVEN A BUG CAN PULL OUT THIS GROUNDING STAKE.
IMPROPER GROUND CAN CAUSE A FATAL INJURY, AND ALSO RUIN YOUR RIG!!
ZIP
HEY!! WHO WENT "APE" WITH THEM SAND BAGS!! ON THIS ONE.
WHY NOT! THEY DEADEN THE NOISE... THIS RIG REALLY ROARS.
THEY ALSO CUT OFF VENTILATION! IF YOU SAND BAG 'EM, KEEP AIR FLOW IN MIND OR SHE'LL OVERHEAT AND SEIZE FOR SURE.
SURE, SAND BAGS PROTECT YOUR RIG. BUT YOU ALSO NEED SKIDS, RAIN COVERS, AND SHADE OR ELSE THE ELEMENTS WILL KILL YOUR GENERATOR AS QUICK AS CHARLIE'S MORTARS.
HEY BUG... SHE'S LOW ON GAS. I'LL FILL 'ER UP NOW.
HOLD IT! NEVER FILL FUEL TANKS WHEN THE ENGINE IS RUNNING OR HOT!


WHY NOT?
BECAUSE
BOOM
THAT'S WHY!!
WHY ISN'T THIS GENERATOR ON LEVEL GROUND!
...IF SHE'S NOT SITTING LEVEL YOUR CRANKCASE CAN'T GET LUBE TO YOUR CRANK-SHAFT AND THEN ZAP!! NUMBAH 10 GENERATOR.
HEY BUG.. HOW COME YOU KNOW ALL THIS INFO??
BECAUSE I READ THE PUBS--DA TM'S OR MANUFACTURER'S PUBS - IF THE GENERATOR ONLY HAS MANUFACTURER'S PUBS. I ORDER 'EM LIKE I DO A REPAIR PART. THEN MY SUPPORT SENDS THE REQUEST TO: U.S. ARMY MOBILITY EQUIPMENT COMMAND, ATTN: AMSME-STL-E, 4300 GOODFELLOW BLVD., ST. LOUIS, MISSOURI 63120
AND SO... IN RECOGNITION OF YOUR CONTRIBUTION TO THE FINE PERFORMANCE OF THE GENERATOR EQUIPMENT IN THIS UNIT... WE DESIGNATE YOU...
UNIT MAINTENANCE MAN OF THE MONTH
HMF... BET HE NEVER EVEN MENTIONS ME... OR GIVES ME A BIT OF CREDIT....

GO means gear oil. And it means trouble for your G742-series 2½-ton truck's rear wheel bearings if it gets into the hub. Even worse, GO can mean disaster if it leaks onto your brake linings.

But there're 2 seals that block GO — if they're installed right, like so:



This 9/32-by-17/32-in hunk of cork is missing altogether in some trucks. It has to be cut to fit from Cork, Sheet, FSN 5330-350-9099. Bevel one end a little to fit where the inner end of the keyway slopes up.

CHANGE A BUM RADIATOR CAP OR ELSE . . .

THAR SHE BLOWS

You ever notice how a bum two-bit part can put an expensive piece of equipment out of business? Sure you have!

One of the most common examples of this problem can be found in the radiator cap on a truck, tank, personnel carrier, self-propelled gun, fork lift—you name it.

Sure, you eye the radiator coolant level on your "before operation check." You may even notice that the cap was on tight which meant that the large cap spring was in good shape.

But there's one more simple check you want to make—one that's overlooked all the time.

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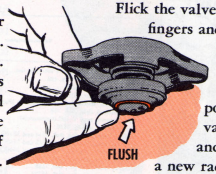
But there's one more simple check you want to make—one that's overlooked all the time.

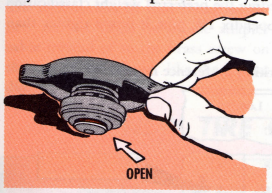
Focus on the center of the cap . . . the vacuum valve. This valve is spring loaded and it should be seated (flush) if the spring is good.



Flick the valve with your fingers and if it does not spring back to the flush position, the valve is shot and you need a new radiator cap.

HERE'S WHY:

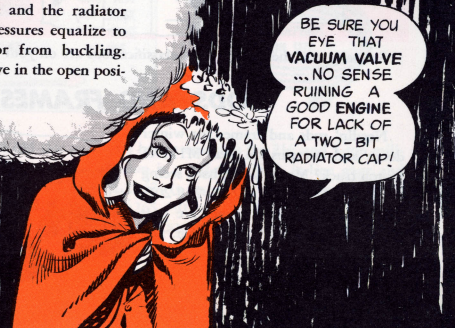
When your engine is running the vacuum valve has to be closed so that your coolant system can be pressurized. The only time the valve opens is when you



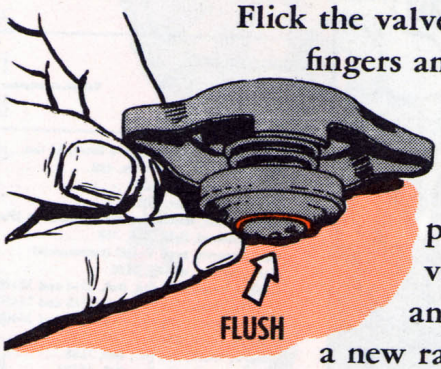
shut off the engine and the radiator and atmospheric pressures equalize to prevent the radiator from buckling. You won't see a valve in the open position unless it's shot.

'Course a broken valve may not seat right to give you the seal you need during operation—that's the rub.

When the valve is not seated the water pump will push coolant right out the overflow hose. And if you lose enough coolant your engine will overheat—maybe worse . . . like a cracked block!!



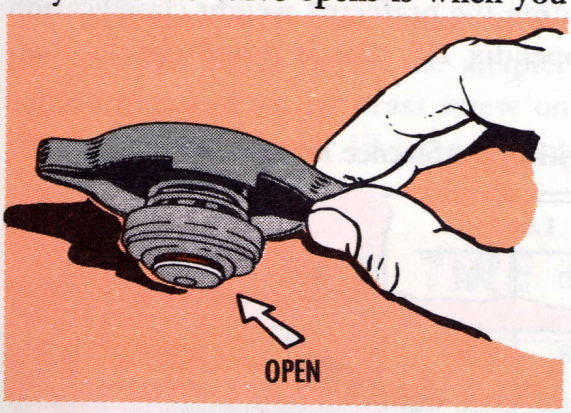
Focus on the center of the cap . . . the vacuum valve. This valve is spring loaded and it should be seated (flush) if the spring is good.



Flick the valve with your fingers and if it does not spring back to the flush position, the valve is shot and you need a new radiator cap.

HERE'S WHY:

When your engine is running the vacuum valve has to be closed so that your coolant system can be pressurized. The only time the valve opens is when you shut off the engine and the radiator and atmospheric pressures equalize to prevent the radiator from buckling. You won't see a valve in the open position unless it's shot.



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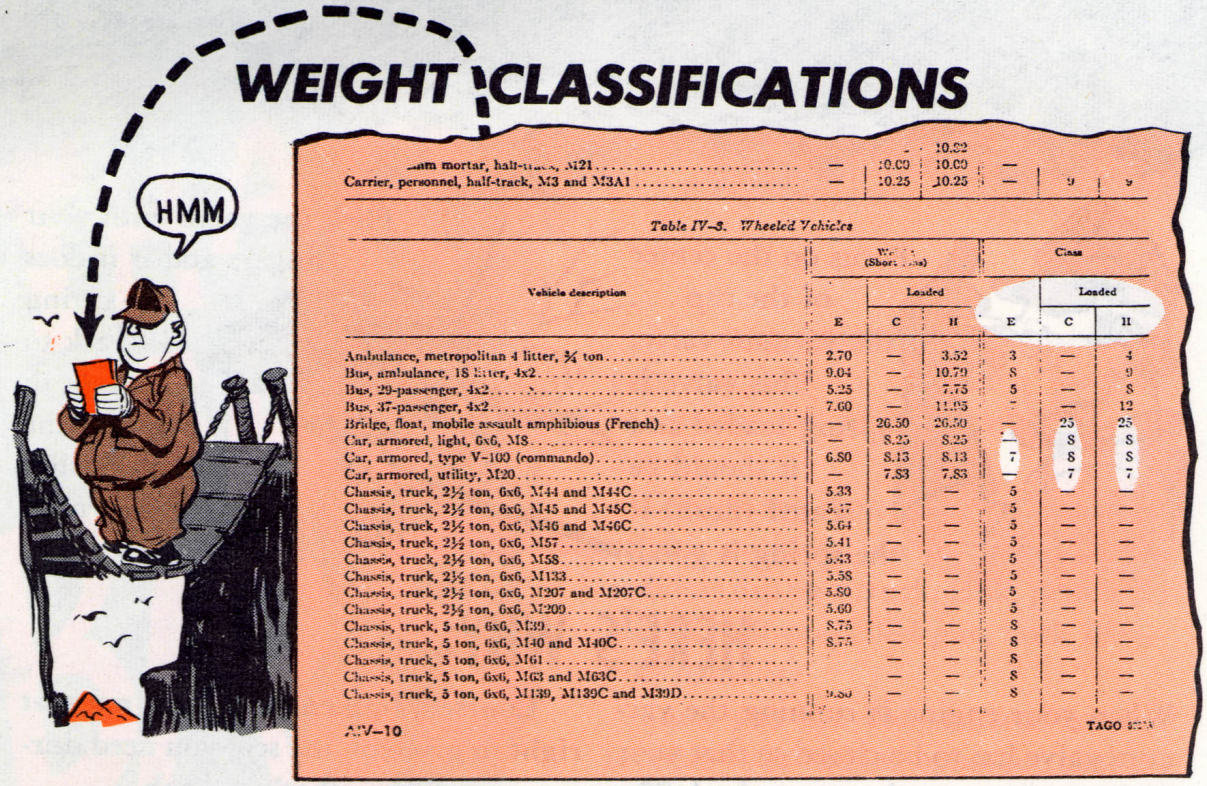
WEIGHT CLASSIFICATIONS



[illegible] mortar, half-track, M21	—	10.00	10.00	—		
Carrier, personnel, half-track, M3 and M3A1	—	10.25	10.25	—	9	9

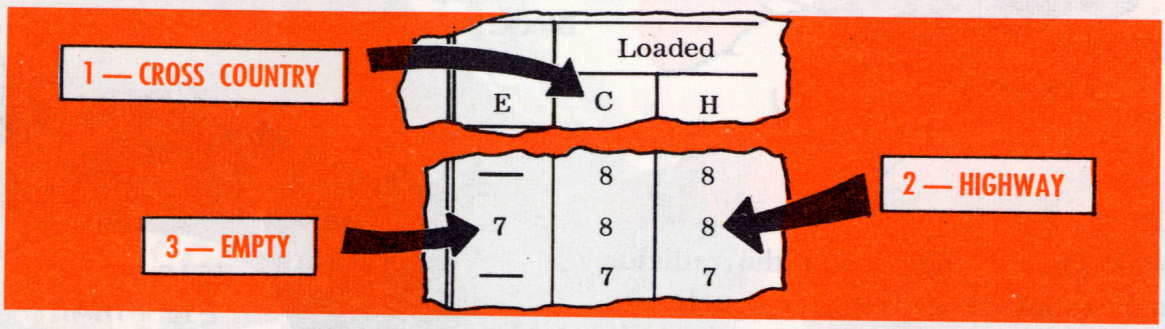
Table IV-3. Wheeled Vehicles

Vehicle description	Weight (Short Tons)			Class		
		Loaded			Loaded	
	E	C	H	E	C	H
Ambulance, metropolitan 4 litter, ¾ ton	2.70	—	3.52	3	—	4
Bus, ambulance, 18 litter, 4x2	9.04	—	10.79	8	—	9
Bus, 29-passenger, 4x2	5.25	—	7.75	5	—	8
Bus, 37-passenger, 4x2	7.60	—	11.95	7	—	12
Bridge, float, mobile assault amphibious (French)	—	26.50	26.50	—	25	25
Car, armored, light, 6x6, M8	—	8.25	8.25	—	8	8
Car, armored, type V-100 (commando)	6.80	8.13	8.13	7	8	8
Car, armored, utility, M20	—	7.83	7.83	—	7	7
Chassis, truck, 2½ ton, 6x6, M44 and M44C	5.33	—	—	5	—	—
Chassis, truck, 2½ ton, 6x6, M45 and M45C	5.47	—	—	5	—	—
Chassis, truck, 2½ ton, 6x6, M46 and M46C	5.64	—	—	5	—	—
Chassis, truck, 2½ ton, 6x6, M57	5.41	—	—	5	—	—
Chassis, truck, 2½ ton, 6x6, M58	5.43	—	—	5	—	—
Chassis, truck, 2½ ton, 6x6, M133	5.58	—	—	5	—	—
Chassis, truck, 2½ ton, 6x6, M207 and M207C	5.80	—	—	5	—	—
Chassis, truck, 2½ ton, 6x6, M209	5.60	—	—	5	—	—
Chassis, truck, 5 ton, 6x6, M39	8.75	—	—	8	—	—
Chassis, truck, 5 ton, 6x6, M40 and M40C	8.75	—	—	8	—	—
Chassis, truck, 5 ton, 6x6, M61		—	—	8	—	—
Chassis, truck, 5 ton, 6x6, M63 and M63C		—	—	8	—	—
Chassis, truck, 5 ton, 6x6, M139, M139C and M39D	9.80	—	—	8	—	—

AIV-10 TAGO [illegible]

Better recon Ch 1 (Apr 66) to FM 5-36, Route Recon and Classification, before you cross that next bridge. If you're needing the preferred weight classification number for your vehicle, para IV-2, Appendix IV, pins it down tighter than your parade field britches.

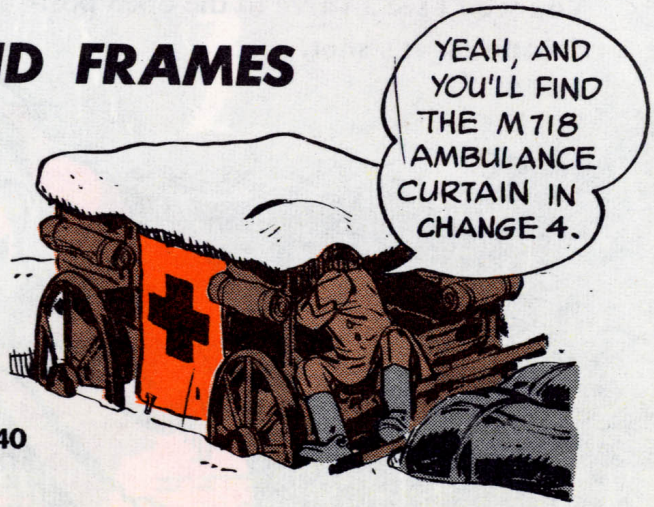
The 1-2-3 order of vehicle weight marking preference is:



So make sure the right weight classifications are on your vehicle.

RODS AND FRAMES

Needin' rods and frames for winter doors and curtains on that M151A1 ¼-ton truck? Maybe you missed seeing Ch 1 (Mar 65) to TM 9-2320-218-20P. You'll find rods and frames are part of the kit, door and side curtain, and can be had separately also.

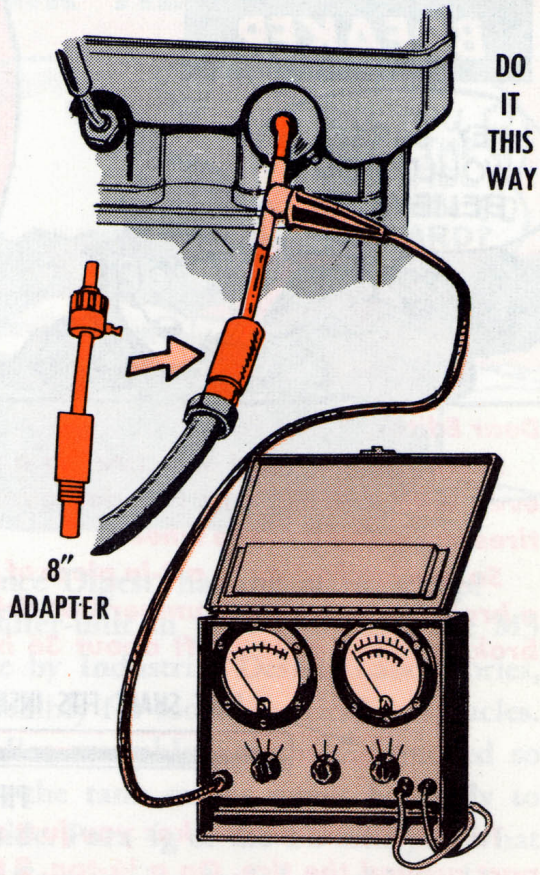


TACHOMETER-DWELL TEST SET

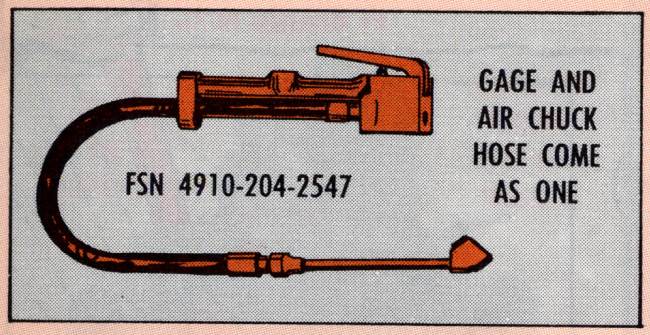
You may have a new model tachometer-dwell test set, FSN 4910-788-8549, which replaces the FSN 4910-395-1996 test set in your No. 1 Supplemental Tool Kit and your No. 2 Common Tool Kit. It's added to the No. 2 Common by Change 1 (May 66) to SC 4910-95-CL-A72.

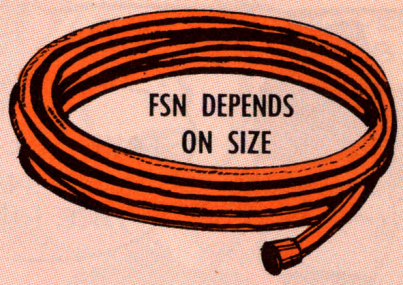
There's one important thing to keep in mind. When you use that new test set, don't connect the tachometer test lead to the spark plug adapter the same way that you did the old test set. If you do, you'll burn out the set.

You'll need the 8-in spark plug adapter FSN 4910-356-7504, from your adapter set FSN 4910-348-7600. The tachometer test lead clamp on the new test set snaps on to the adapter cable instead of to the brass screw on the end of the adapter like the old set did.



NEW TIRE GAGE FSN

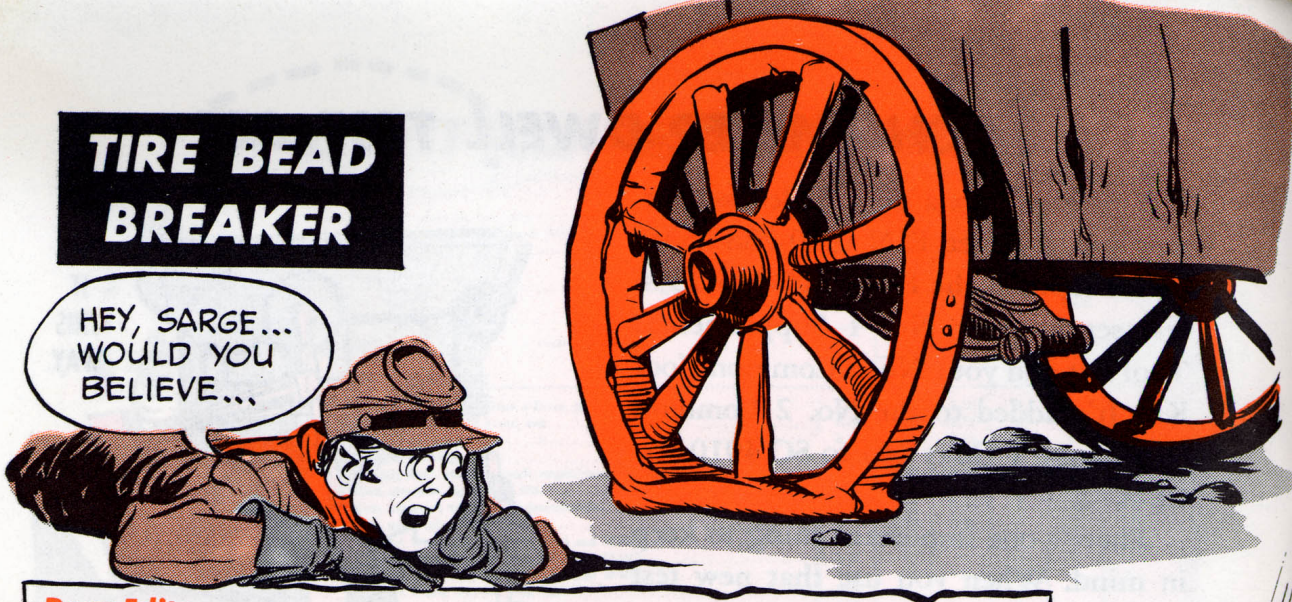




Forget about those old tire gage and hose assemblies for 2½ and 5-ton military design wheels. The new combination is a self-contained, in-line gage and air chuck with its own FSN 4910-204-2547. It fits any of these hoses . . . FSN 4310-092-9264 (20 ft) . . . 4310-092-9265 (30 ft) . . . 4310-092-9266 (60 ft).

Each of these hoses is ¼-in ID with a ¼-18NPT male coupling and ½-20NF female coupling.

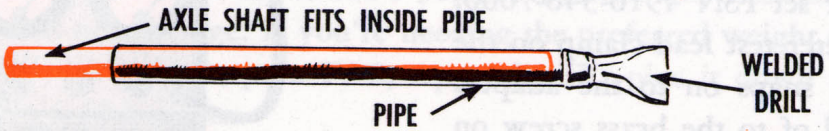
TIRE BEAD BREAKER



Dear Editor,

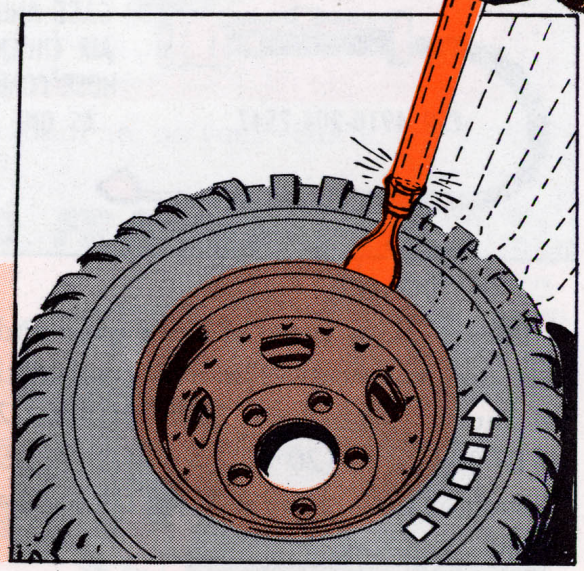
Breaking the bead on a tire for a repair job can be quite a chore, even with a pneumatic tire demounter . . . seems like some of those tires are welded to the wheel!

So, we latched on to a 2-in piece of pipe, 30 inches long and welded a broken pneumatic hammer flat drill to one end. Then we located a broken 1½-in axle shaft about 36 inches long.



To use the bead breaker you just slip the axle in the pipe and impact around the tire. On a ¼-ton, 2 times around the tire will break the bead, while it will take 3 to 5 trips around on a 2½-ton . . . works like a charm.

CWO Randolph Phillips
307 Eng
Ft Bragg, N. C.



(Ed Note—Good going. Looks like a real fine tool to have on hand when others fail. Just be sure you use a soap solution on the bead and move the tool around the tire after each impact so you don't do any damage.)

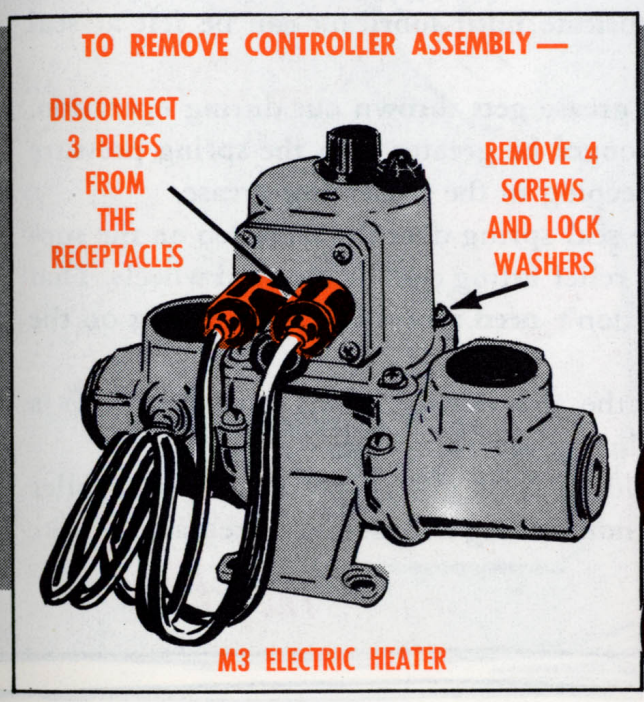
M60 & M60A1 TANKERS . . .

AIR FILTER'S AIR HEATER

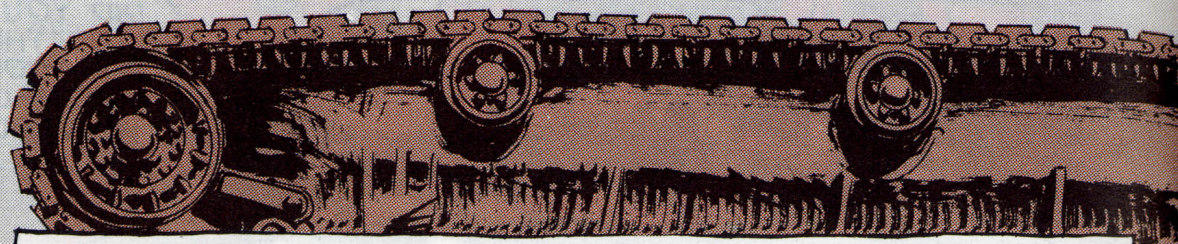
TB 3-600 (Aug 66) EIR and Maintenance Digest, has the warm scoop!

If the M13 or M13A1 gas-particulate filter-unit in your tank uses the M3 electric heater (FSN 4240-807-6856) made by Industrial Design Laboratories, you'd best check the heater's controller assembly for loose electrical receptacles.

If the receptacles are floppy, the controller assembly has to be removed so the receptacles can be soldered. Otherwise, the tank masks won't be ready to provide warm air when it's real cold outside. Para 4g of the TB tells you what to do. M3 heaters made by the Vapor Heater Corporation don't have this problem.



SUPPORT ROLLER



Dear Half-Mast,

Looks to me like the LO and the -20 TM for the M60A1 tank contradict each other. The LO says to pump GAA into the support roller until you can feel the GAA at the seal behind the roller. On 'tuther hand, the -20 TM says to replace seals when grease is felt behind them. Which is right?

SP4 E. E. H.

Dear Specialist E. E. H.,

Both. Once you understand how the grease seal works on the support rollers of the M60, M60A1 and M48A2 tanks, you'll see there's no conflict between the LO and the -20 TM.

When you're lubing, the spring-loaded seal lets grease pass through it when the pressure of the grease pushes down the spring. So, if you put your hand in the access slot behind the roller and feel the grease coming through the seal you know that support roller has enough lube. That's why the LO says, "lubricate until lubricant can be felt at seal behind roller."

After a little of the excess grease gets thrown out during operation, the grease pressure will no longer be greater than the spring pressure so the spring will expand, keeping in the remaining grease.

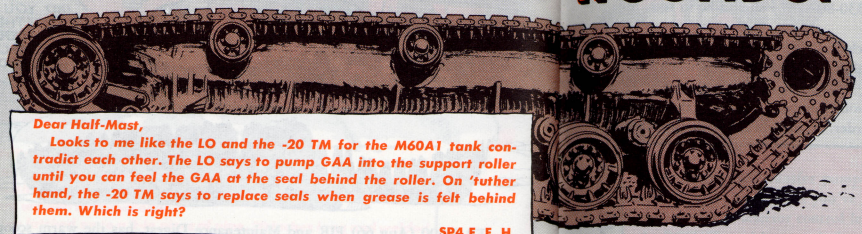
In other words, the grease seal spring does the same job on the support rollers that the pressure relief fitting does on the road wheels. That is why you don't have and don't need a pressure relief fitting on the support rollers.

You'll find grease behind the seal during lubing and sometimes a little bit in hot weather or during severe operation.

Other times, if you feel a lot of fresh grease behind a support roller seal, it means that the seal is not holding and should be replaced—like the -20 TM says.

Half-Mast

SUPPORT ROLLER ROUNDUP



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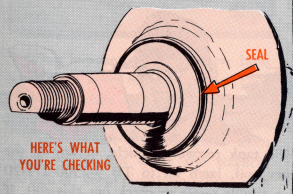


SEARCHLIGHT SAVER

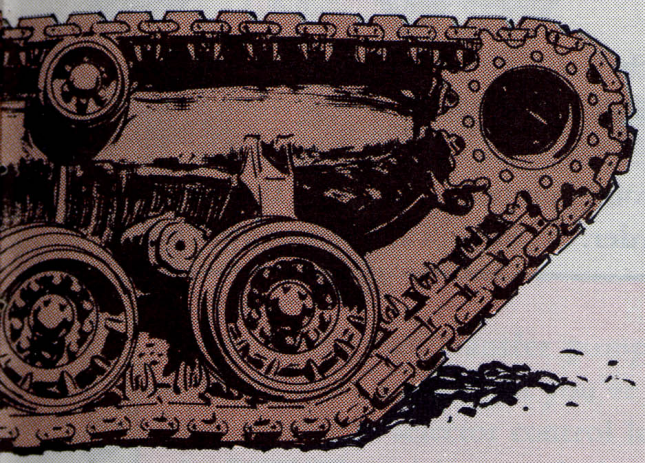
The xenon searchlight on your M60 or M60A1 tank can't shed any light if you break it. This can happen real easy when you're moving your tank through the woods.

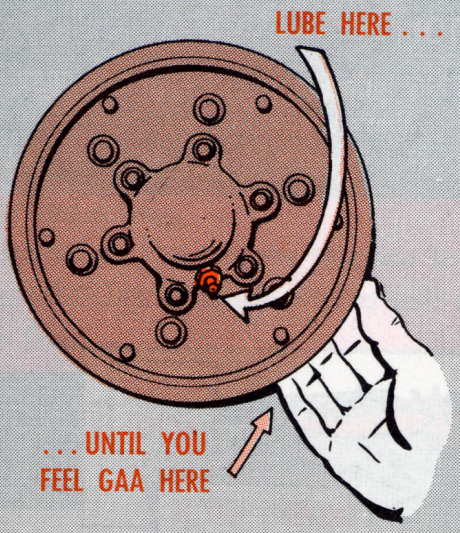
To protect your light from unfriendly tree limbs, position it to the rear of the tank. That way the branches will hit the turret instead of the light.

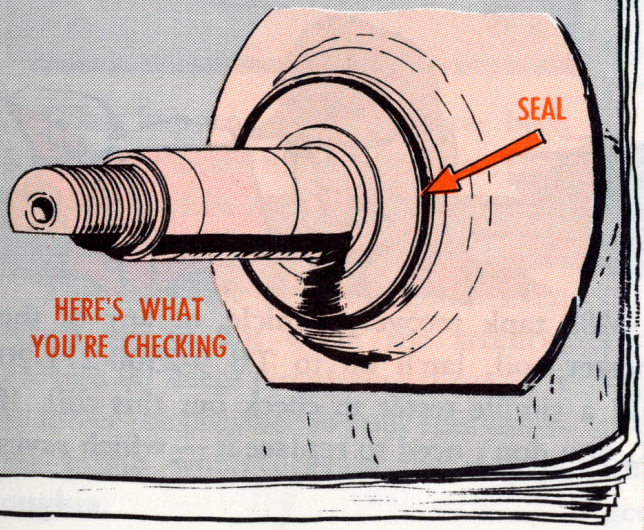
If the light is mounted for operation, putting the gun in travel lock will give the best protection. If the light is stowed, you can go through the woods with the gun to the front.

See page 60 for more xenon searchlight info.

ROUNDUP







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See page 60 for more xenon searchlight info.

M113/M113A1 Supply

How many feet in an each?

You supply types can quit worrying because from now on all orders for Seal, rubber, special shaped section, FSN 5330-807-2874 should be in feet, instead of per each.

This chart shows you in inches how much bulk seal you need for various uses, where you can find it in TM 9-2300-224-20P/3 (Nov 64), and when there is an exception to the rule.

To use it all you have to do is add up the total number of inches of the rubber seal you need, change the figure to feet and order. . . . Sure beats counting eaches.

CARGO HATCH

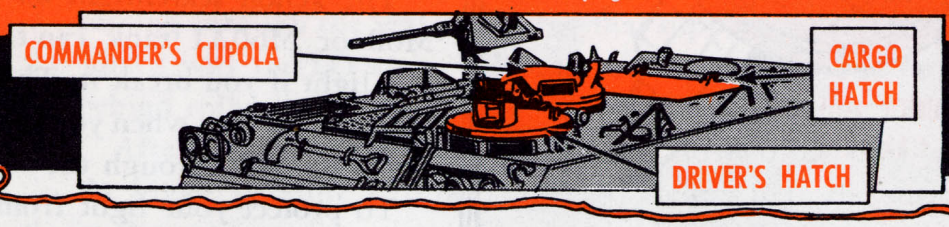
1. M113 family (G294) and M113A1 family (G312) page 193, 81¼ inches.
2. Exceptions. M106 (G294) and M106A1 (G312) use seal installation kit FSN 2540-886-5843, page 389.

DRIVER'S HATCH

1. M113 and M113A1 family vehicles, page 201, 72⅜ inches. Seal FSN 5330-679-9832 has been superseded by bulk seal FSN 5330-807-2874 so that's what you order.
2. Exceptions. M474E2 (G294) and M548 (G312), no seal required because no driver's hatch.

COMMANDER'S CUPOLA

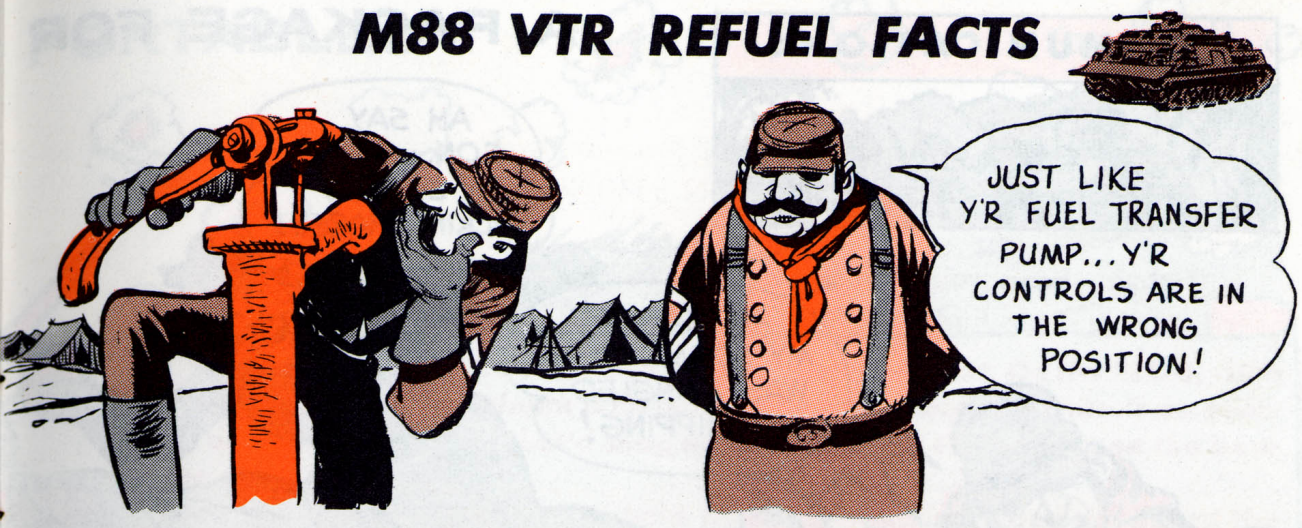
1. All members of M113/M113A1 family that have a commander's cupola, page 209, 71 inches.
2. Exceptions. M577/M577A1, commander's hatch, page 339, 90 inches.



BOOSTER COIL TESTING

If you have an M48A2 tank, an M88 tank recovery vehicle, or any of the other vehicles with a magneto booster coil, latch on to TB 9-2300-271-20 (May 65). It tells you how to build a simple tester to check out this coil. If the coil, FSN 2920-565-0785, is OK, you don't need to replace it—which saves you $20.60.

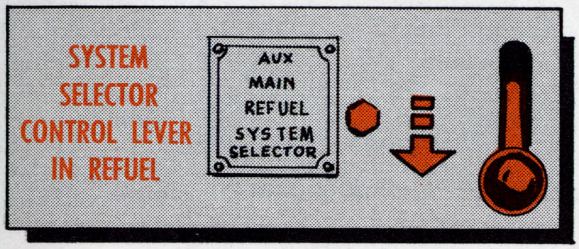
M88 VTR REFUEL FACTS



To make the fuel transfer pump on your M88 VTR work right you've got to put the system selector control lever in the REFUEL position. . . . It figures.

But some drivers have been shoving the lever into the AUXILIARY position, which gives emergency power for the boom and spade but not for refueling or defueling.

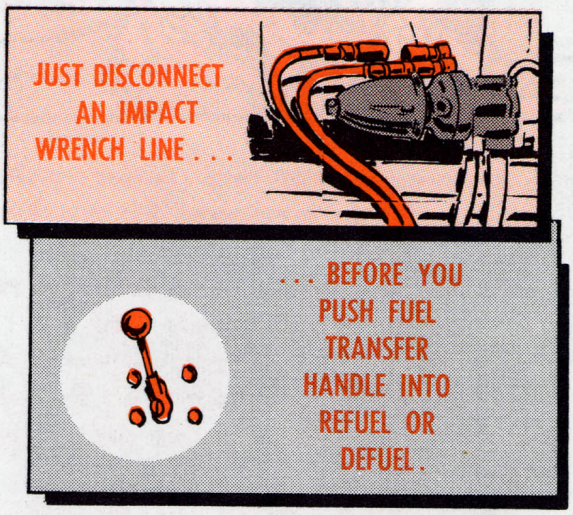
Even when you put the selector lever in the REFUEL position you're still not home free.



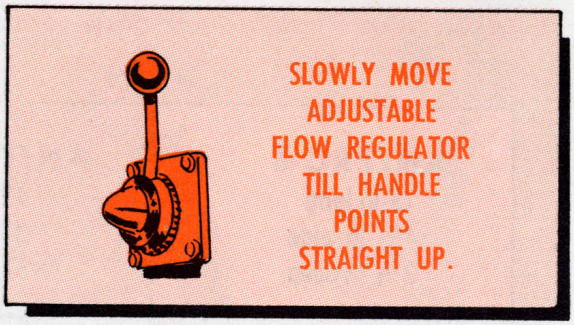
What happens, crewmen have been leaving the hoses to the impact wrench connected while they try to operate the fuel transfer.

This does not work too good. Even when you're not using the wrench, enough oil keeps circulating through it to lower the pressure so your fuel transfer pump won't operate the way it oughta.

Simple cure, though:



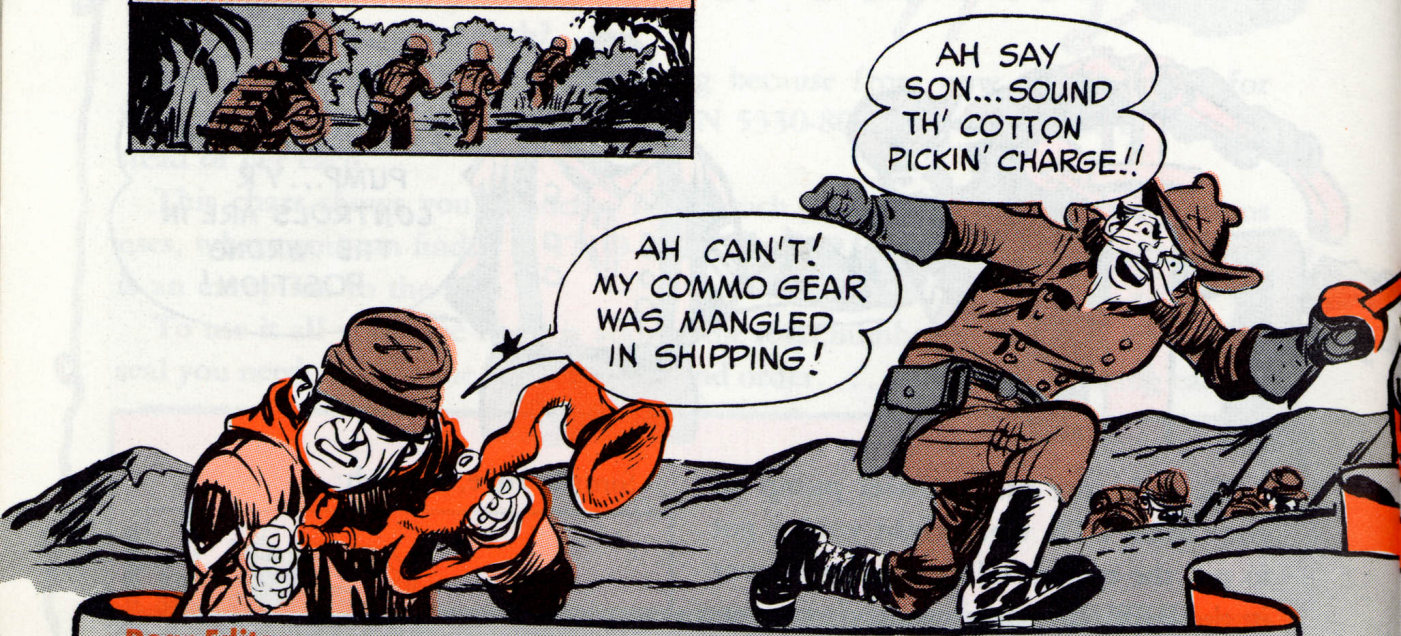
Now all you have to do for maximum pumping power of 38 GPM is slowly move your adjustable flow regulator until the handle points straight up. Remember, on this handle the lower



the number the greater the power, and unless you have it at "0" you're not getting its full power.

COMMUNICATIONS

A PACKAGE FOR



Dear Editor,

We thought you and readers of PS might be able to use the basics on carrying racks we've rigged for transporting (and storing, too, if space permits) portable radio sets.

We've made three different sized racks to suit the AN/PRC-6, AN/PRC-8 thru -10, and AN/PRC-25 radio sets.

The handiest arrangement we've found is a four-radio rack.

Naturally, the racks protect the sets while they're in transit to the shop, the field, or wherever. They've prevented considerable damage . . . and are extra valuable for rough terrain transport.

The easy-to-take part of the racks is that all you need are a few old ammo boxes and a handful of screws. For added protection, a piece of steel packing case strapping could be put around the outside of the rack. The strapping helps keep the screws from backing out.

A block of wood 3-in by 6-in screwed or bolted onto two opposing sides serves as a carrying handle. Of course, the bottom of the box is solid.

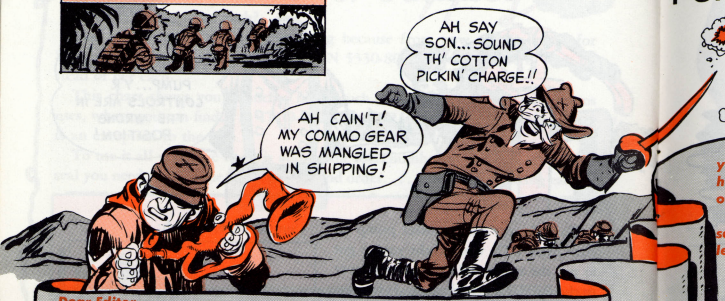
Since the size of the scrap lumber used might vary, here are the interior measurements needed for each compartment for the various radio sets:

AN/PRC-6	AN/PRC-8, -10	AN/PRC-25
15-in long	19-in long	11½-in long
4½-in wide	3¼-in wide	4¼-in wide
3½-in deep.	5¾-in. deep.	5-in deep.

Using ¾-in ammo box wood, the PRC-8 outside measurements would be 16¾ by 20½-in.

COMMUNICATIONS

A PACKAGE FOR PORTABLES



Dear Editor,

We thought you and readers of PS might be able to use the basics on carrying racks we've rigged for transporting (and storing, too, if space permits) portable radio sets.

We've made three different sized racks to suit the AN/PRC-6, AN/PRC-8 thru -10, and AN/PRC-25 radio sets.

The handiest arrangement we've found is a four-radio rack.

Naturally, the racks protect the sets while they're in transit to the shop, the field, or wherever. They've prevented considerable damage . . . and are extra valuable for rough terrain transport.

The easy-to-take part of the racks is that all you need are a few old ammo boxes and a handful of screws. For added protection, a piece of steel packing case strapping could be put around the outside of the rack. The strapping helps keep the screws from backing out.

A block of wood 3-in by 6-in screwed or bolted onto two opposing sides serves as a carrying handle. Of course, the bottom of the box is solid.

Since the size of the scrap lumber used might vary, here are the interior measurements needed for each compartment for the various radio sets:

AN/PRC-6	AN/PRC-8, -10	AN/PRC-25
15-in long	19-in long	11½-in long
4½-in wide	3¼-in wide	4¼-in wide
3½-in deep.	5¾-in. deep.	5-in deep.

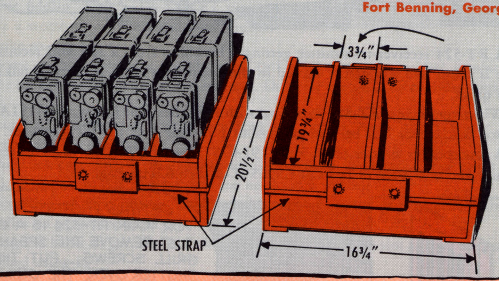
Using ¾-in ammo box wood, the PRC-8 outside measurements would be 16¾ by 20½-in.

The width and depth hold the sets snug during transport. On the PRC-8, -10's you've got to be sure the depth is no more than 5¾-in, because there's an overhang on the top of the set that'd snag and wouldn't let the set rest on the base of the rack.

Also, we've found that screws hold better than nails . . . and the size of the screws depends on the thickness of the wood used. A screw that anchors at least an inch into the base wood works well.

If bolts are easy to come by, they could be used to secure the handles.

SSG Raphael Hoff
Fort Benning, Georgia



PORTABLES

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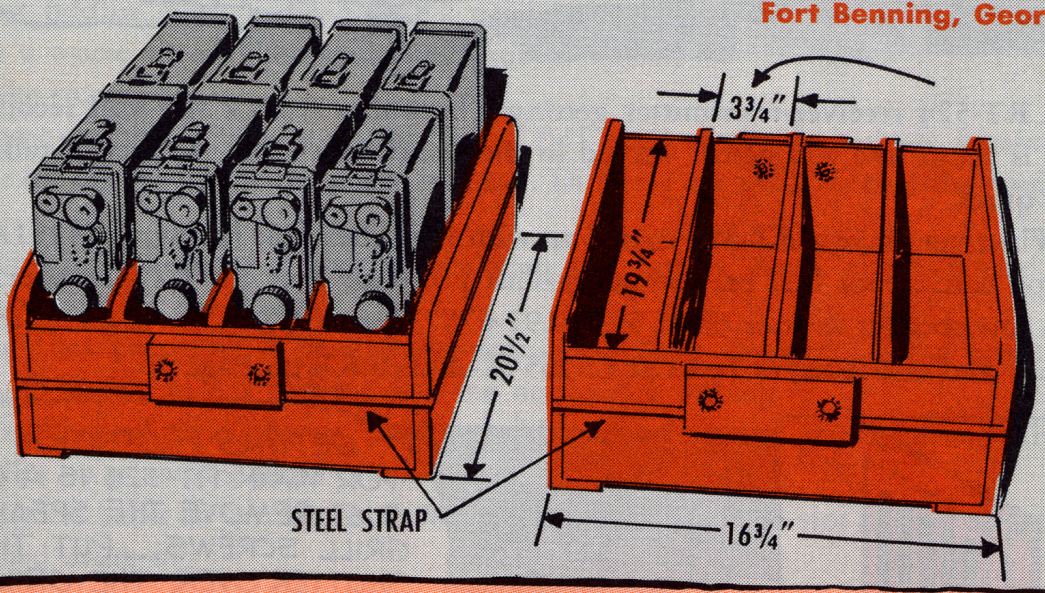
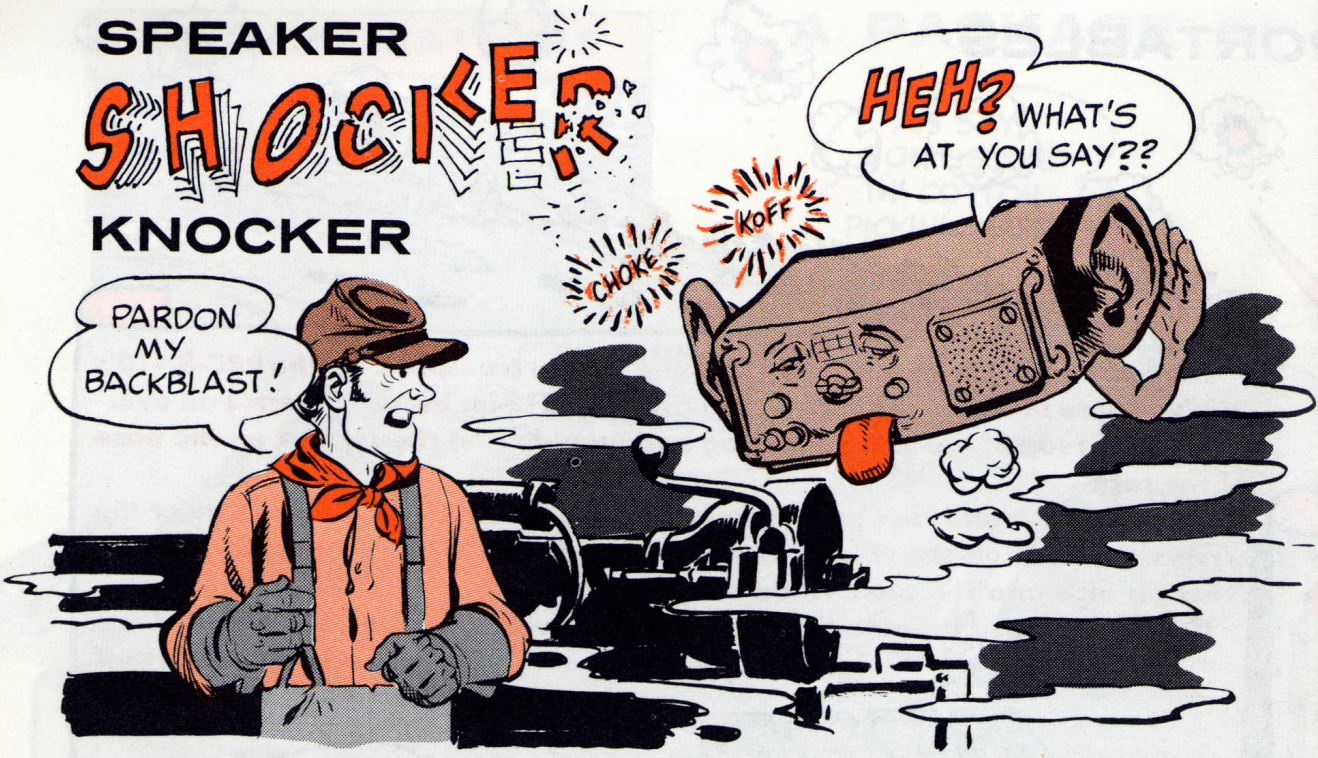


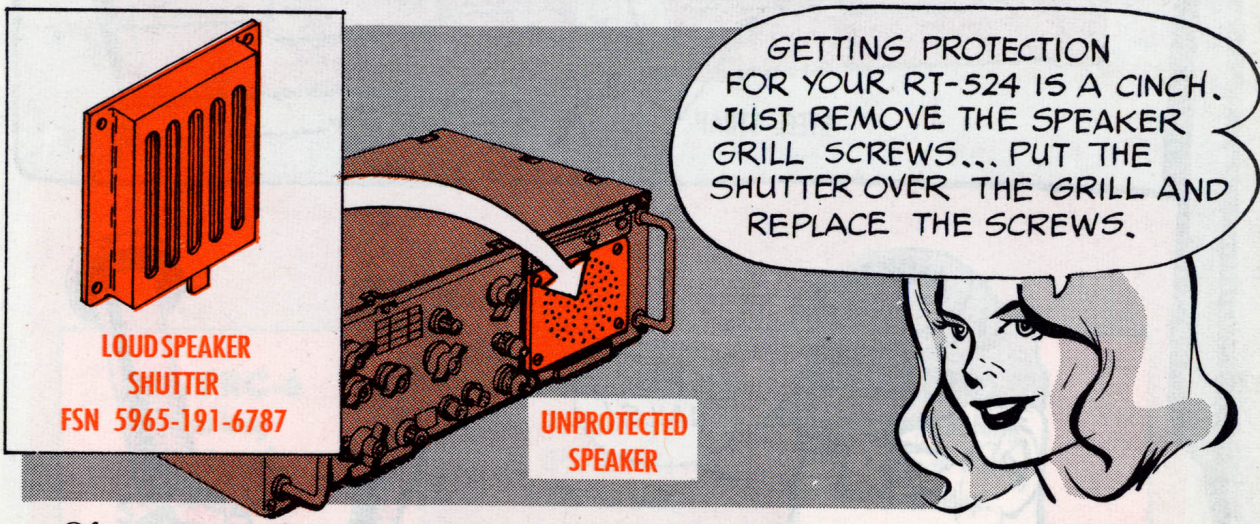
SPEAKER SHOCKER KNOCKER



A RT-524 receiver-transmitter getting a backblast from a 106-MM recoilless rifle is about like you gettin' kicked in the mouth by a mule. It shuts off talking real quick.

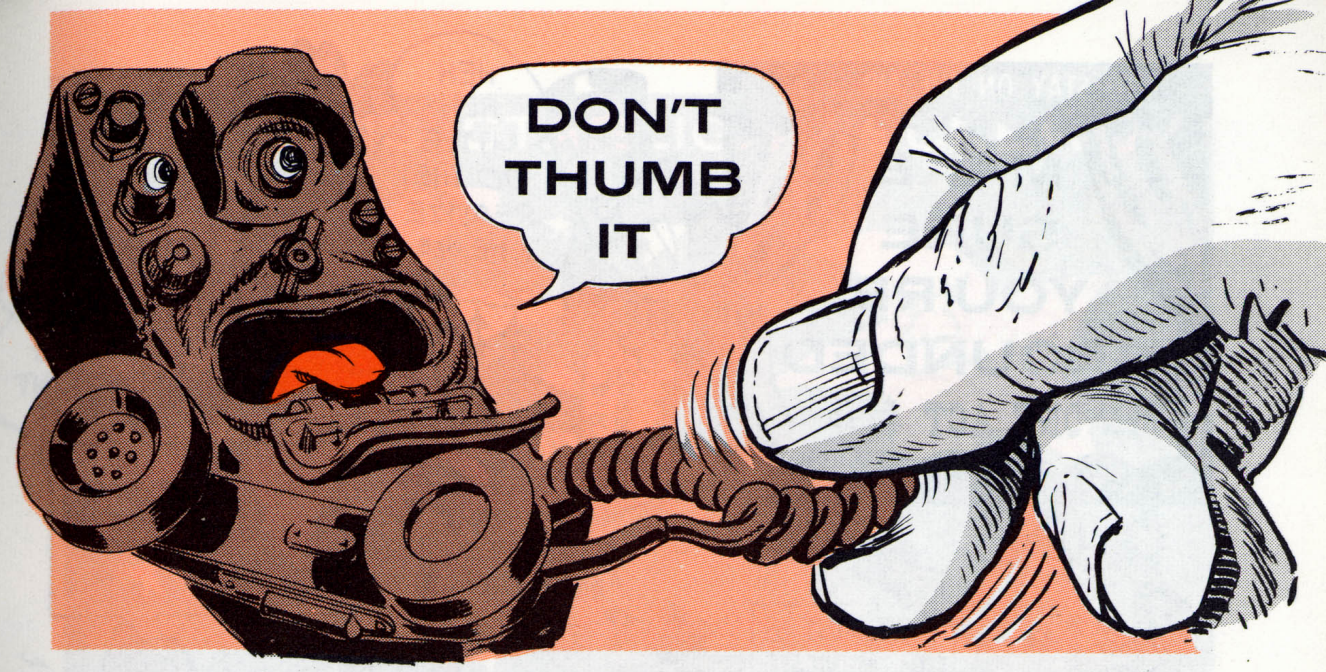
When you have a RT-524 cozied up with a recoilless rifle in, say, an M151A1C ¼-ton truck, your best bet's to put a blast protector over the RT's speaker.

A loudspeaker shutter (FSN 5965-191-6787) for the RT-524 will do the trick. You'll find one listed in Fed Cat C5965-IL-A (Feb 67) on Page 36.



Of course, you have to remember to close the baffle before firing the rifle or you'll blow out the speaker cone.

The protector is needed only with this rifle setup. The speaker's built-in protection will take care of it with other armament.



For hitchhiking a man couldn't want a better friend than a good, active thumb.

For fiddlin' with a TA-312/PT or TA-43 field telephone a man couldn't have a worse enemy than said same thumb.

Like so. . . .

Some restless operators, thumbs goin' full blast, wear the rubber insulation right off the lead-in wires to the handset. Ditto for the insulation at the housing end.

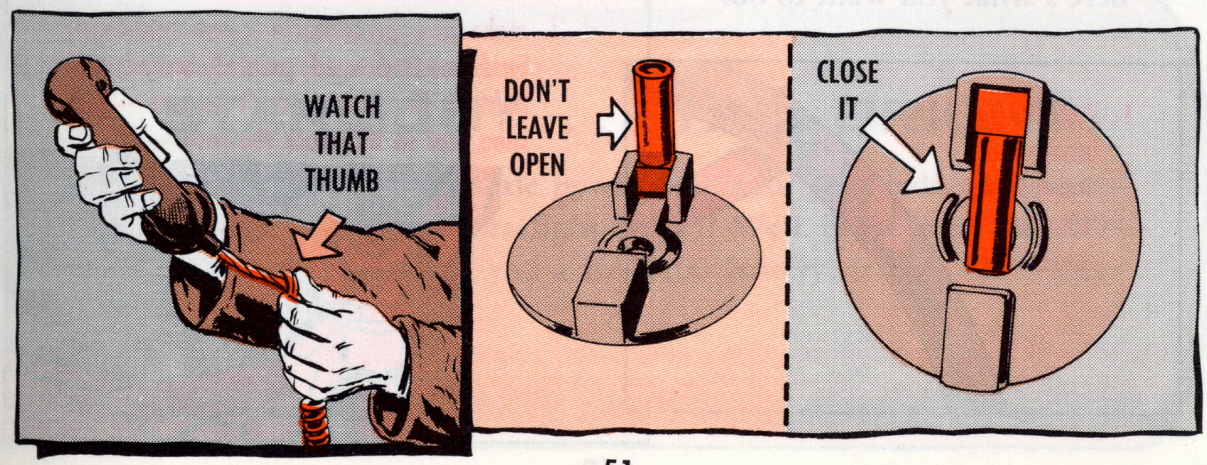
Lot's of maintenance shops have seen the results, cause that's where the phones go after the damage.

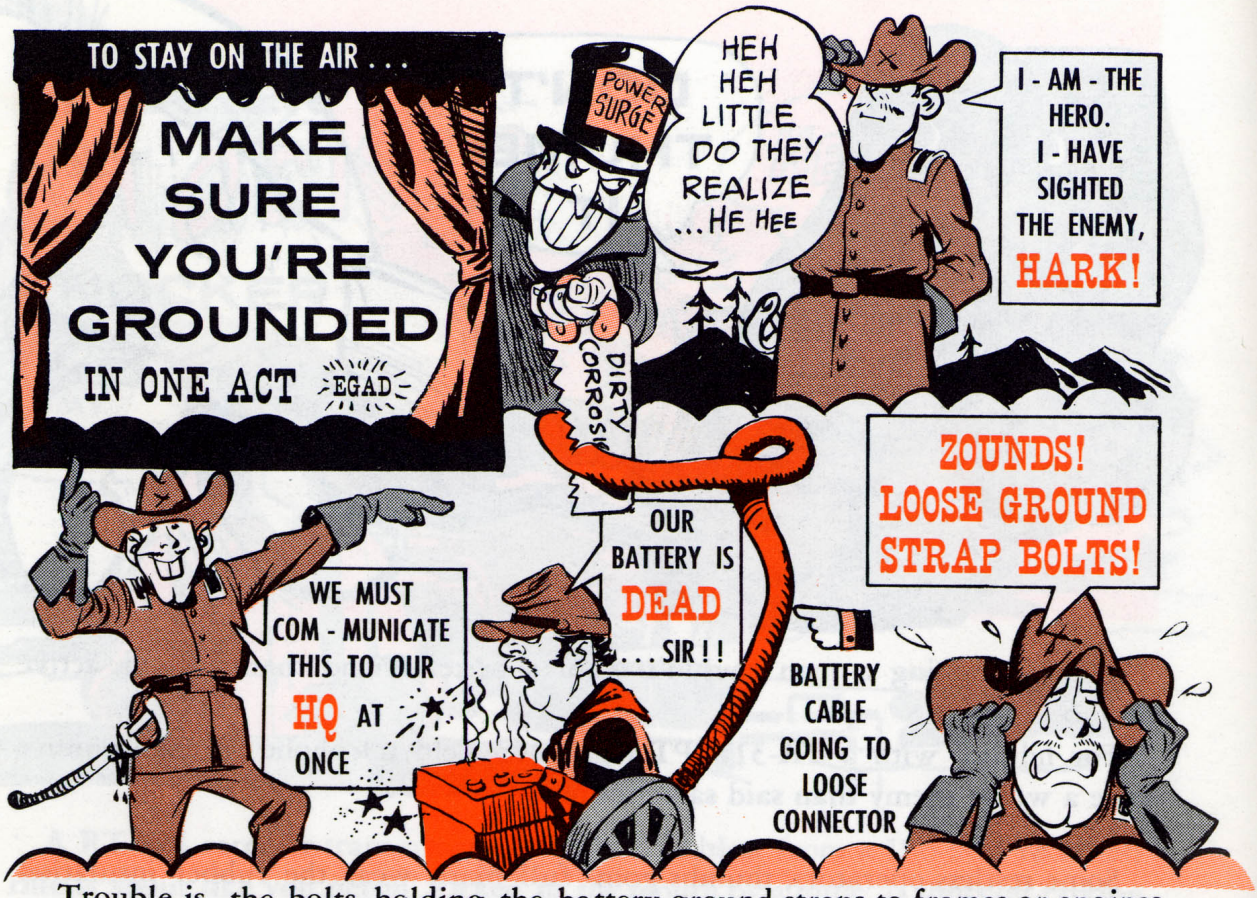
Another past-time is peeling the insulation from the wires. Same result — back to the shop. All because of some nervous thumbing.

Speaking of field phones (and switchboards) here's a little caution about handles on generator hand cranks:

A good habit to get into is to fold the handle back in its slot as soon as you've finished using it.

Stickin' out, the handle can snag on any of a thousand things and break off.





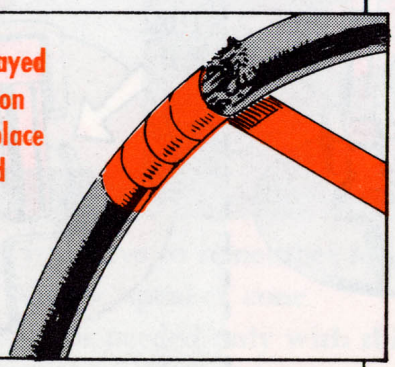
Trouble is, the bolts holding the battery ground straps to frames or engines are out of sight most of the time and get overlooked. Dirt and rust get under, lockwashers fail, and bolts come loose, a power surge hits the radio, and another set's kaput.

Then when rough going comes along, loose connections feed on-and-off current. A voltage surge hits a commo power pack, and—whammy!

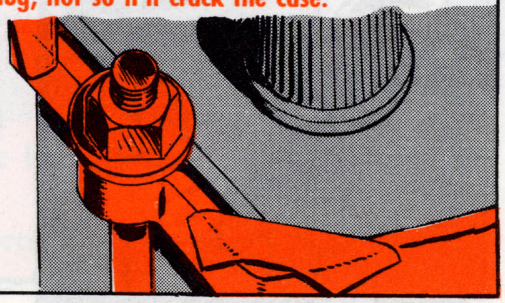
So squint at the ground end of all your ground straps. Unbolt 'em and clean the surfaces to make metal-to-metal contact on the chassis—or engine. Check lockwashers—be sure they're live. Then tighten back, and rivet-eye it every now'n then.

Just to be sure nothing else flickers your commo equipment's current supply—here's what you want to do:

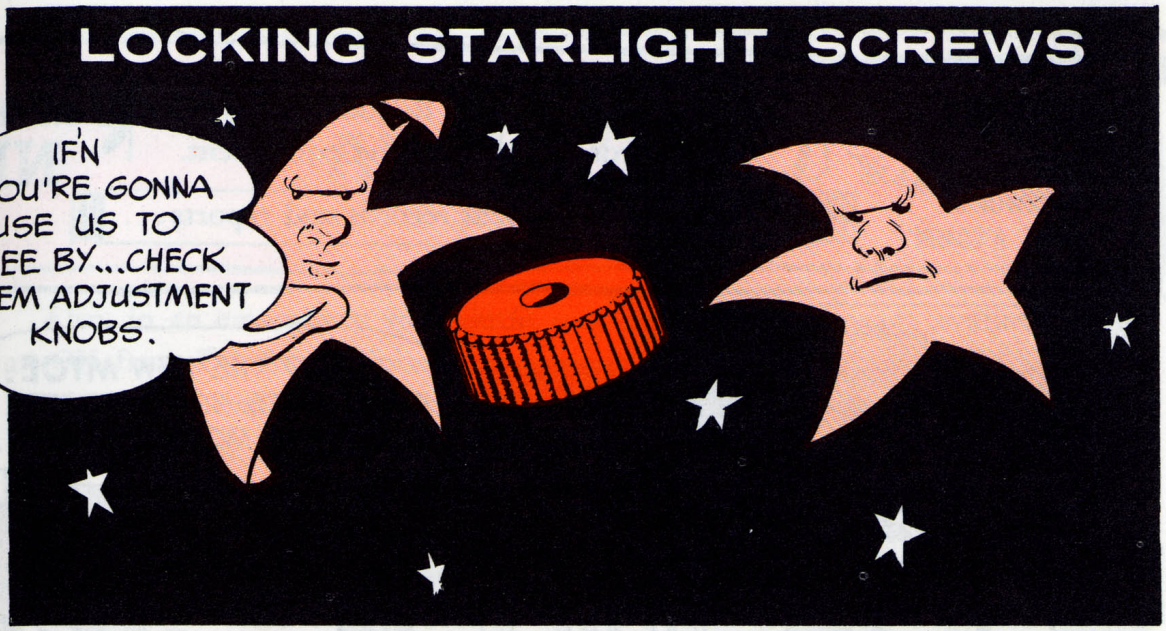
1. Tape frayed insulation and replace frazzled cables.



2. Make sure the carrier box and hold-down hardware is cleaned, painted, braced, and tight so the battery can't bounce—just snug, not so it'll crack the case.



LOCKING STARLIGHT SCREWS



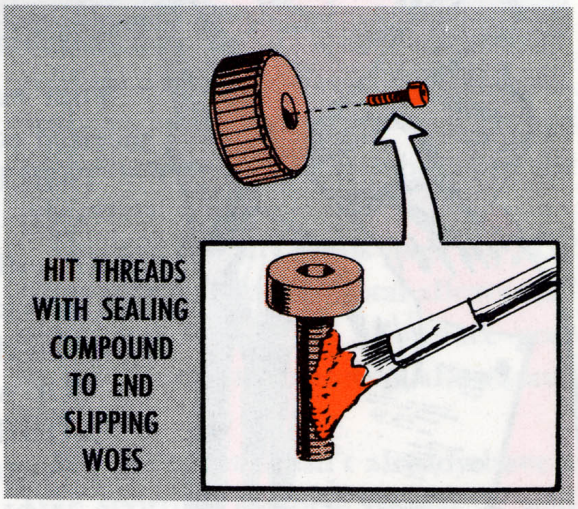
Are slipping screws keeping things out of focus and you can't adjust the reticle pattern on your starlight scope (FSN 1090-688-9954)?

Don't sweat it.

Remove the screws from the focusing elevation adjustment and azimuth adjustment knobs.

Dab the threads with locking torque sealing compound (FSN 8030-081-2329, listed on Page 68 in DoD catalog C8000-IL-A, dated Jan 66) or any other MIL-S-22473B sealing compound. There's a list on Page 179 of the GSA catalog (Oct 66).

Replace the screws. Let 'em set for a couple or 3 hours. Then, the screws won't stray and the knobs will stay.



STARLIGHT... STAR BRIGHT

You been wantin' a little power source for your individual weapons night vision sight (Starlight Scope)? Well, beam in on this. FSN 6135-926-0827 will get you a BA-1100 battery. It's in Ch 3 (May 66) of SB 11-30.

NOTICE:
LIGHTER PAPERWORK LOADS A'COMIN'

Keeping property book records . . .

Requesting supplies and equipment.

DIG THOSE . . . NEW

Making up equipment records and reports . . .

Your outfit will now get all its authorized equipment under one

TABLE OF ORGANIZATION AND EQUIPMENT (TOE)

which will document and will provide the works.

When changes are needed, the TOE will be modified by a

MODIFICATION TABLE OF ORGANIZATION AND EQUIPMENT (MTOE)

No more sweating out special letters of authorization, or getting equipment changes by EML (equipment modification lists).

And, no more special requests for items in excess of authorized allowances, as noted in para 4-8, AR 735-35. When your outfit needs more equipment, less equipment, or different equipment to do its job, the MTOE will take care of the changes.

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TOE's AND MTOE's

Also, in an emergency your outfit can use the fastest means available to get an OK from DA for additional equipment. Then it has 60 days to send in the MTOE which includes the equipment requested on an emergency basis.

The big thing with the MTOE is that it's "fathered" in the field by the TOE user concerned. So, like never before the field has a big hand in setting up its authorization documents.

Modification of a TOE—who is responsible for the MTOE, when and how it's made up—is covered in Section V, AR 310-31 (Apr 66), Organization and Equipment Authorization Tables.

THE NEW SET-UP

The new TOE format is streamlined, easier to use and provides loads of handy info on equipment identification and use.

The MTOE simply trims or fattens the basic TOE's allowances to fit the needs of a specific unit or units.

When a TOE is modified the MTOE sports the UIC (unit identification code) of the unit concerned. That's how you'll quickly spot a published MTOE which modifies your basic TOE. The MTOE OK'd for your outfit, of course, will not affect other units operating under the same basic TOE.

If DA policy makes changes which apply to all units operating under a basic TOE, the TOE will be revised by a **numbered** change, not by MTOE.

And, when DA initiates changes which apply across the board for various types of TOE's, the changes will be published as consolidated TOE changes. And, as in the past, the consolidated TOE changes will be numbered in the 300-series.

On your property book page the TOE allowance goes in the "total allowance" block and the MTOE allowance goes in the "current operating allowance" block.

If your outfit doesn't already have a TOE sporting the new format, it will soon—so keep an eye out for it. You can spot a new one easy enough since they all have a capital G after the TOE number. And, also at the bottom of the cover page you'll find a paragraph that says:

"This table is published for the primary purpose of converting the superseded TOE to the new format prescribed by the New Army Authorization Documents System". (NAADS).

MORE

TOE's AND MTOE's

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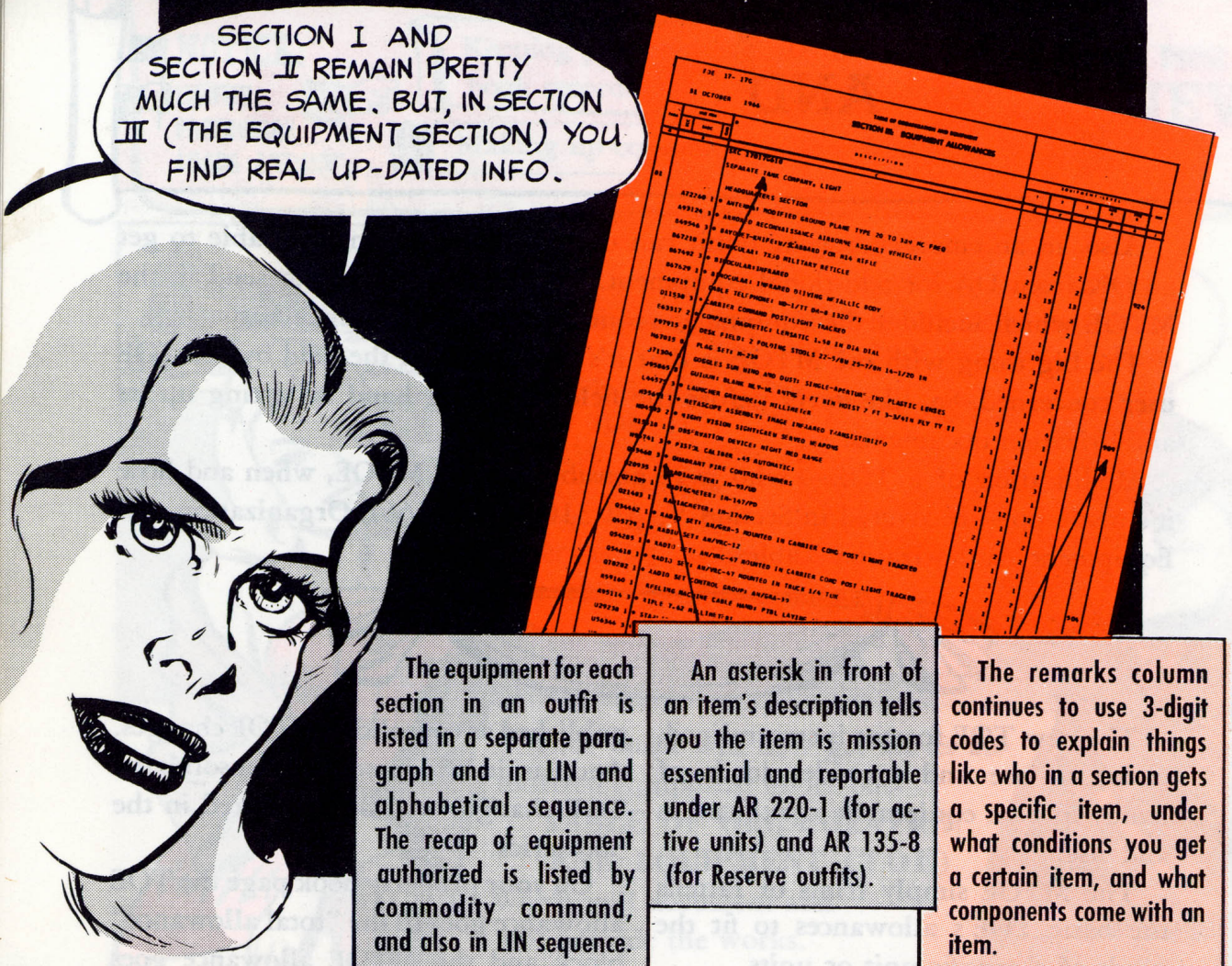
P.S. MORE

HERE'S THE PACKAGE

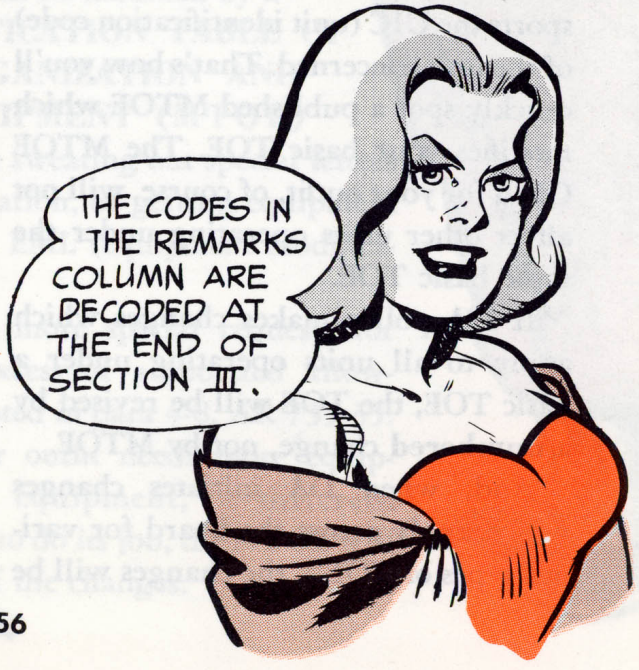


The equipment for each section in an outfit is listed in a separate paragraph and in LIN and alphabetical sequence. The recap of equipment authorized is listed by commodity command, and also in LIN sequence.

An asterisk in front of an item's description tells you the item is mission essential and reportable under AR 220-1 (for active units) and AR 135-8 (for Reserve outfits).

The remarks column continues to use 3-digit codes to explain things like who in a section gets a specific item, under what conditions you get a certain item, and what components come with an item.

	REMARKS
202	1 PER POWERMAN.
219	1 PER SR RCVY MECH, SR TRACK VEH MECH RCVY MECH, TRACK VEH MECH, TRACK VEH MECH HELPER.
238	1 PER TP-INSTL RPMN, SWITCHBOARD, CONTROL SET AN/GRA-39.
245	1 PER UNIT AUTH RADIO MECH.
502	1 PER TEST SET ELECTRON TUBE TV-7/U.
504	TO BE MOUNTED IN ARMORED RECONNAISSAN AIRB



THE 600-SERIES TYPE STUFF

And, speaking of the remarks column, here's something to watch for when you're checking your equipment against TOE allowances.

Although the 600-series coded items —those things you get "When Authorized By" the major commander concerned (WAB TOC, WAB USACONARC, WAB ARADCOM) —are listed in Section III of the new TOE's, they're not included in the TOE's equipment recap info. In other words, when these items are needed they'll be authorized by MTOE.

600	WAB TOE, USCONARC OR DA. NOT INCLUDED IN TOTALS, AUTHORIZATION ESTABLISHED ONLY BY MTOE UNDER PROVISIONS OF AR 310-31.
602	1 PER INDIVIDUAL EXCEPT CHAPLAIN AND MED PERS WAB USCONARC ARADCOM OR TOE. NOT INCLUDED IN TOTALS. AUTHORIZATION ESTABLISHED ONLY BY MTOE UNDER PROVISIONS OF AR 310-31.
604	MBI TO ANY OF THE FOL PERS AS RQR - UP TO 50 PERCENT OFF, NO STR, 1 PER E9, E8, E7 WAB TOC NOT INCLUDED IN TOTALS. AUTHORIZATION ESTABLISHED ONLY BY MTOE UNDER PROVISIONS OF AR 310-31.
608	1 PER TENT FRAME TYPE MAINT WAB USCONARC, ARADCOM OR TOC. NOT INCLUDED IN TOTALS. AUTHORIZATION ONLY BY MTOE UNDER PROVISIONS OF AR 310-31.
609	1 PER TLR TK WATER IN TEMPERATE ZONE V AND VI AND ARTIC ZONE VII WAB USCONARC ARADCOM OR TOC NOT INCLUDED IN TOTALS. AUTHORIZATION ONLY BY MTOE UNDER PROVISIONS OF AR 310-31.

INSTANT SCOOP

The handiest deal in the new TOE format is the addition of a new section —Section IV, which is loaded with equipment identification info, and other handy info for supply and maintenance and unit readiness reports and records. It gives things like:

1. The old LIN's crossed to the new LIN's.

2. FSN's for all items listed in the TOE.

3. Commodity command codes. The codes are explained in para 4b, SB 700-20.

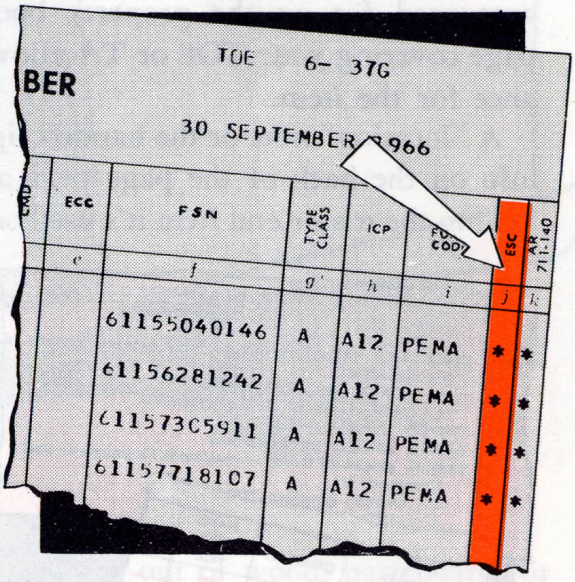
4. Multiple line items showing FSN's for the authorized makes and models.

5. Equipment type classification. The standard A, B, C, LP, N, etc., classification codes listed in para 4e, SB 700-20.

6. ICP codes (inventory control points). The supply agencies responsible for the item. And, para 4c, SB 700-20 covers these codes.

7. An asterisk in a column headed "AR 711-140" tells you an item is reportable under AR 711-5.

8. And, an asterisk in a column headed "ESC" tells you the item takes TAERS (TM 38-750) records.



LOOKS GOOD . . . NO?

Yep. Your unit's equipment requesting, accounting and reporting operations should get easier under NAADS. Can't you just see your paper shuffling sweat easing up already?

END

TROOP INSTALLED STUFF

Dear Half-Mast,

How do you account for major items listed under "troop installed" heading in TM's BIIL?

Do they get a separate property book page? Or, are they listed as components on the back of the page for the major item they're used with?

SFC E. J. A.

Dear Sergeant E. J. A.,

Reportable "troop installed" items which come from your TOE or TA are accounted for on the property book page covering your TOE or TA allowance for the item.

A "location" note or the handreceipt info on the back of the page pegs an item to the major end item it's used on.

On the other hand, BIIL items which are issued with a major end item are considered part of the equipment they come with and are included in the equipment's basic FSN; therefore, they're accounted for on the page covering the major end item itself.

The page simply takes the note "w/equipment" in the nomenclature block. Serial numbers of any weapons that may be issued with the major end item are listed on the back of the page.

Half-Mast

SIGHTING AND FIRE CONTROL
(troop installed)

~~8416~~ BINOCULAR, M17A1 w/equipment (in container on fuze ra
Composed of:
1 - BINOCULAR, M17 (7597723)
4281 1 - CASE, carrying, M63A1 (7694281)
1881 TRIPOD, surveying (Note 1)
TABLE, firing (in pamphlet box)
TABLE, graphical firing w/equipment (in pamphlet box)
Composed of:
1 - TABLE, graphical fir
1 - CASE

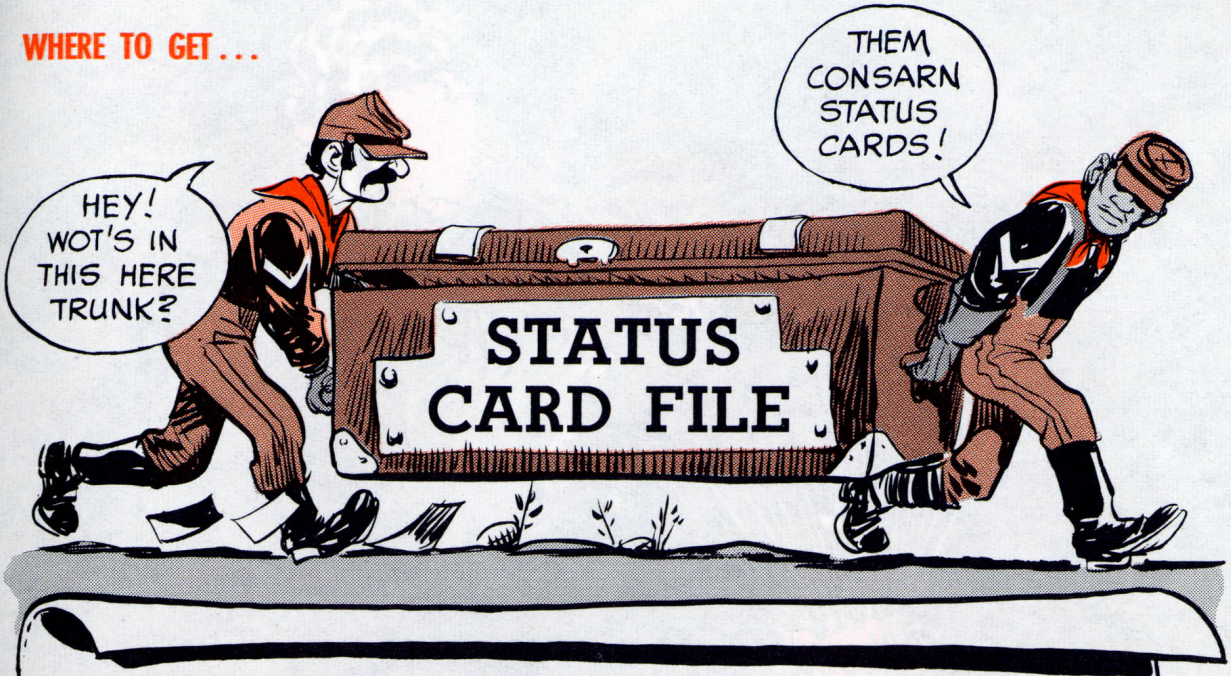
DATE	QUANTITY	HAND REC. NO.
~~5008~~	~~2~~	~~3~~
5008	6	10
5057	1	6
~~5075~~	~~1~~	~~9~~
5140	2	3
6031	1	9
6054	2	5

TECHNICAL SERVICE	TOTAL ALW	CURR OPERATING ALW
	6	6

UNIT	STOCK NUMBER	LINE ITEM NO.
EA	2350-440-8811	1557666

ITEM DESCRIPTION
HOW, SP. FT. 155 MM. M109 w/Equip.

AUTHORITY

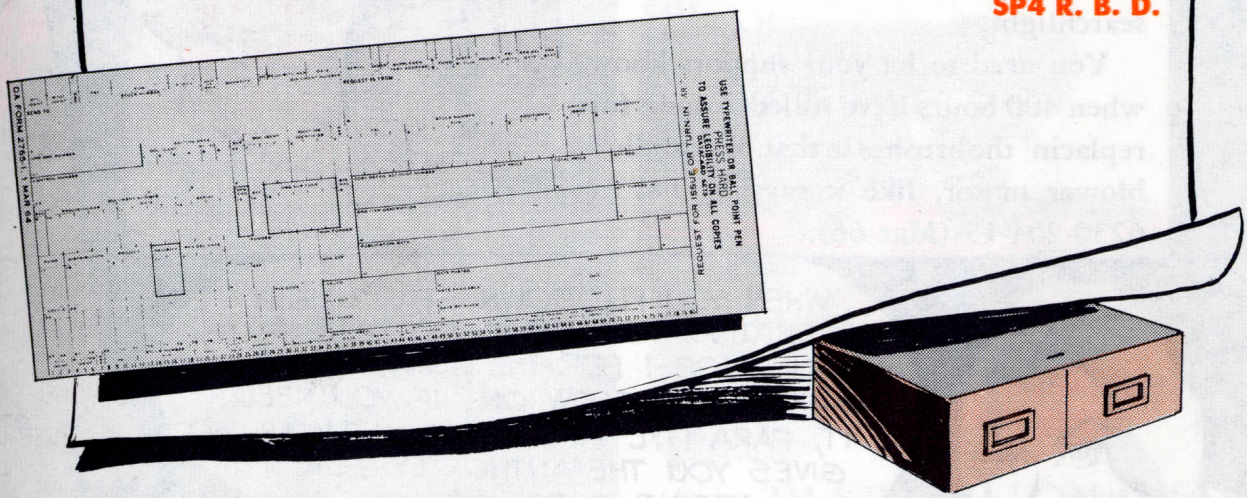


Dear Half-Mast,

AR 735-35 (Oct 65) requires that I keep a considerable number of DA Form 2765's on file.

So what do you suggest we use as a file to keep these cards handy and protected?

SP4 R. B. D.



Dear Specialist R. B. D.,

A lot of supply-types make their own file boxes out of wood, pasteboard, or whatever other suitable material they can scrounge up.

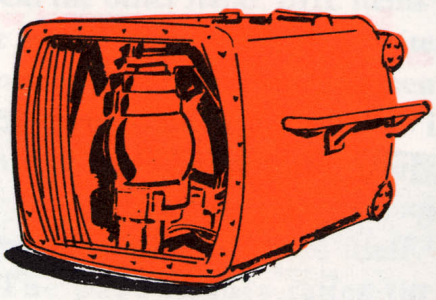
But there's a 2-drawer (side by side) file cabinet in the supply system that's designed especially for these 7⅜-by-3¼-in cards. Listed under FSN 7110-990-8883 in Fed Cat C 7100-IL-A (Mar 66), it costs about $7 and it's a DGSC controlled item.

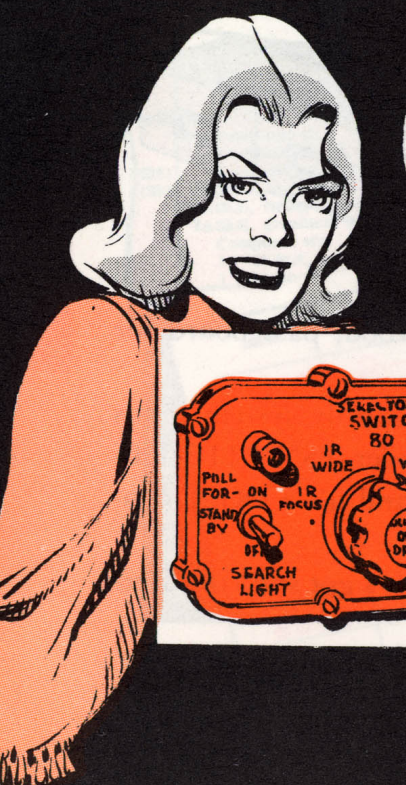
You can file several thousand cards in this cabinet. And it's got stacking slots and interlocking lugs for building a bigger file.

Half-Mast

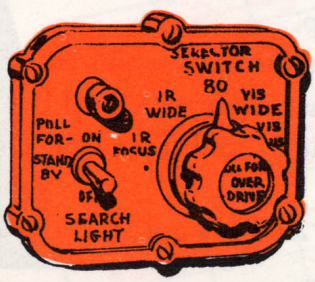
Hey! While you're filling in figures for your M60 tank or M728 CEV, add some for operatin' time of your xenon searchlight.

You need to let your support know when 400 hours have rolled around for replacin' the brushes in that big candle's blower motor, like it says in TM 5-6230-204-15 (Mar 66).

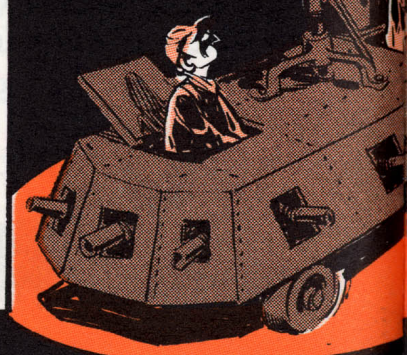




WHEN YOU PUT DOWN SEARCHLIGHT OPERATING TIME ON A SEPARATE DA FORM 2408-1 FOR THE LIGHT, ADD 5 MINUTES TO GLOW ON. IF YOU NEED IT, PARA 1-7c AND 4-26a IN TM 38-750 GIVES YOU THE AUTHORITY FOR ADDING A FORM!



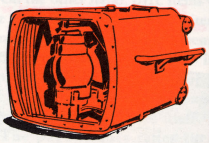
Like f'rinstance, a 30-minute STANDBY and ON time for the searchlight should be jotted down as 35 minutes. That's something extra for the blower motor, which keeps going until the lamp temp's lowered.

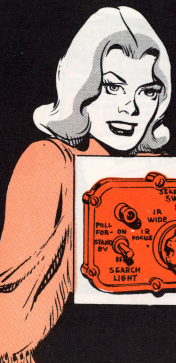


FULL OF HOT AIR

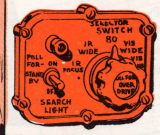
Hey! While you're filling in figures for your M60 tank or M728 CEV, add some for operatin' time of your xenon searchlight.

You need to let your support know when 400 hours have rolled around for replacin' the brushes in that big candle's blower motor, like it says in TM 5-6230-204-15 (Mar 66).





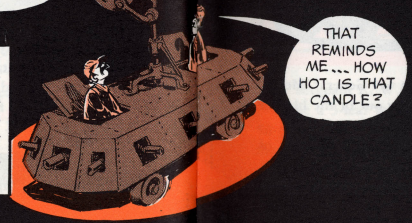
WHEN YOU PUT DOWN SEARCHLIGHT OPERATING TIME ON A SEPARATE DA FORM 2408-1 FOR THE LIGHT, ADD 5 MINUTES TO GLOW ON. IF YOU NEED IT, PARA 1-7c AND 4-26a IN TM 38-750 GIVES YOU THE AUTHORITY FOR ADDING A FORM!



Like f'rinstance, a 30-minute STANDBY and ON time for the searchlight should be jotted down as 35 minutes. That's something extra for the blower motor, which keeps going until the lamp temp's lowered.

Without the blower to throw off the built-up heat, the xenon lamp and lamp connector will burn up.

And remember . . . never turn off the vehicle's master electric circuit switch less than 5 minutes after turning out the light . . . or heat will put an unwanted black-out whammy on the searchlight.

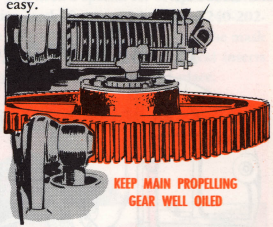


THAT REMINDS ME... HOW HOT IS THAT CANDLE?

SIXTY-TON CRANE CARE

You need a drink oftener in hot, muggy going, and dusty country just makes it worse.

The same's true for your equipment, only it drinks lube 'steada what you like. If you've a 60-ton Harnischfeger 1125G crawler crane, you have to watch it 'specially close . . . 'cause that main propelling gear chokes down easy.



Sure, TM 5-3810-231-12 (May 66) says put chain-wire lubricant (CW) on that gear every 10 hours—but best be sure to give it a drink every 4 hours in hot country or tough going. That gear's on the deck, left of your seat, and there's no cover to protect it. Unless you're quick on the stick with fresh lube, you could be stuck in the boondocks with 230,000 pounds of no-go iron.

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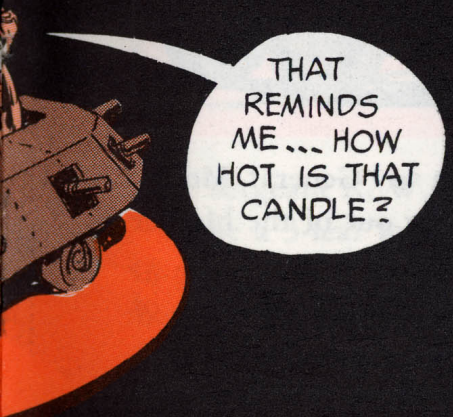

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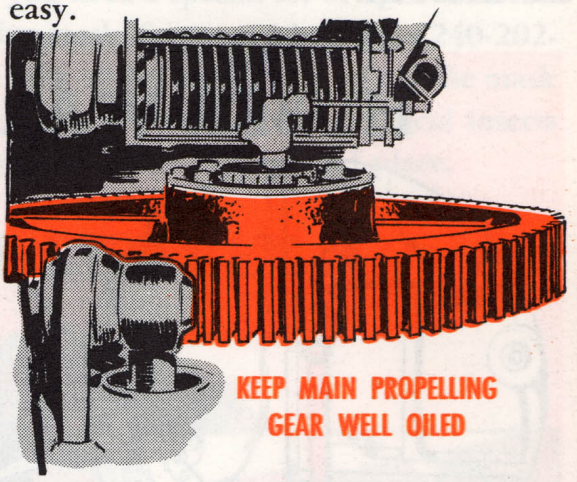

KEEP MAIN PROPELLING GEAR WELL OILED

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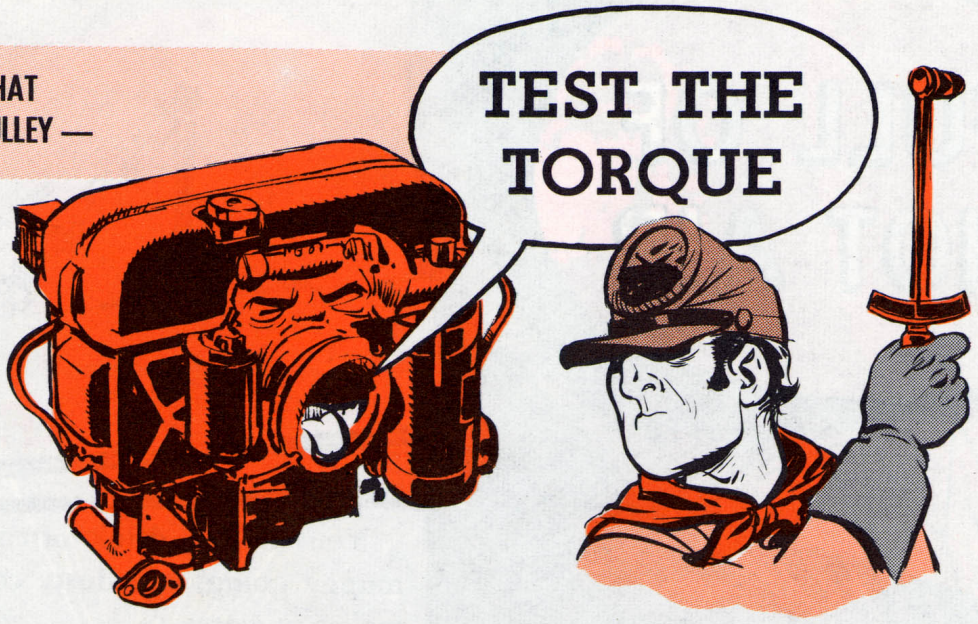
TO SAVE THAT STARTER PULLEY —

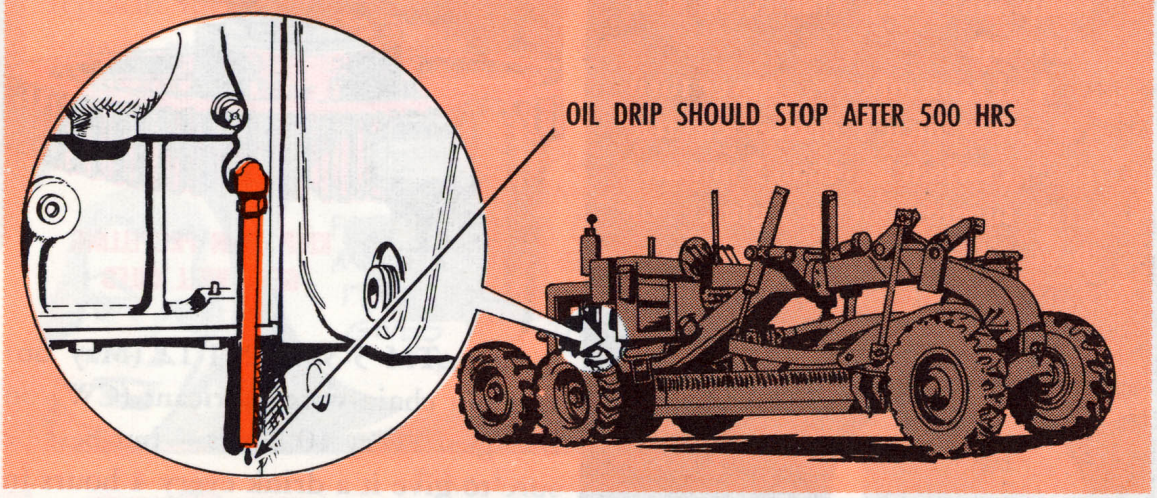


To keep that rope starter pulley on your 10-HP and 20-HP Military Standard Engine from coming loose and halting your alternator, here's an answer:

Torque the nut, FSN 5310-582-8783, in front of the pulley down to 950 or 1000 inch pounds (if your wrench reads in foot pounds, that's 80 lb-ft).

That torque suits both sets of Continental Mil Std Engine Models 2A042-II and 4A084-II as well as both Hupp-Hercules Mil Std Engine Models 2A042-III and 4A084-III.

HUBER-WARCO OIL DRIP



If you've got a Huber-Warco Grader Model 4D with a General Motors 4-71 engine you may have noticed oil blowing or dripping out of the bleeder pipe from the air box.

There's a reason for that drip. The engine piston sleeves are now made of different material so it takes longer for the piston rings to set to the sleeve walls.

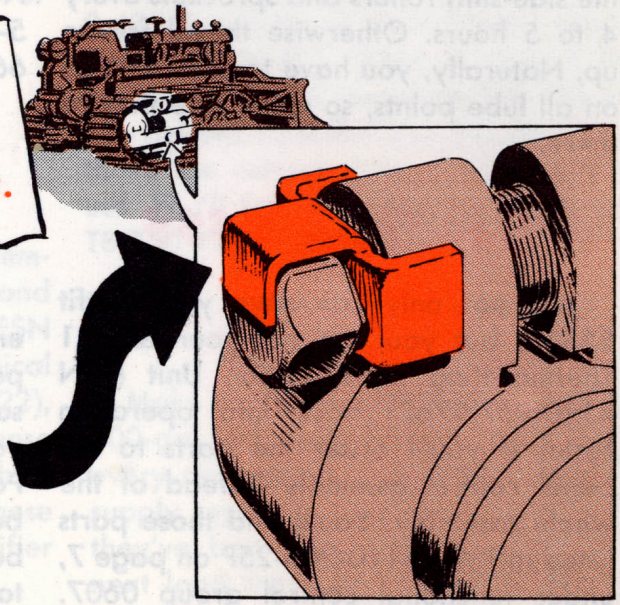
After you've run your rig from 300 to 500 hours the oil drip should stop.

COMBAT SPECS

Do you wear glasses? Well, remember you need a special set of optical inserts for when you wear the M17 field protective mask. See para 13, TM 3-4240-202-15 (Nov 62). And, if you're planning to take off for some place where the mask is always part of the uniform for the day, be sure you've got the optical inserts before you go. They might not be so easy to come by just any old place.

BEND THE LEAVES

Dear Half-Mast,
We keep losing the trunnion cap bolts from our TD-18-182 IHC Tractor. Any ideas?
SGT R. W.

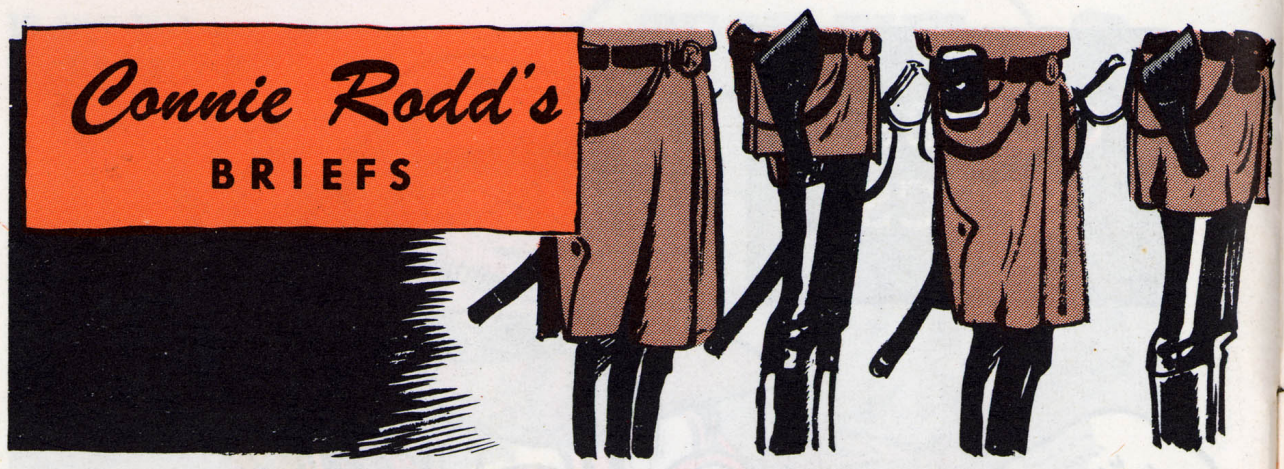


Dear Sergeant R. W.,

Make a 3-leaf lock plate out of 18-gage sheet metal and put it behind the bolt head. Bend 2 leaves over the bearing cap and 1 over the bolt head.

Half-Mast

Connie Rodd's BRIEFS



APH-5 Flying Helmet

You air types in Charlie country had better eagle-eye your APH-5 and APH-5A flying helmet. If it has the visor, FSN 8415-933-9281 or FSN 8415-933-9282, authorized by MWO 10-8415-202-30/3 (Aug 66), then you should round the lower edge of the visor. You can do this by honing or filing. You always file toward the edge of the visor.

Rough Terrain Roll

To make music with your rough terrain fork lift, either the 6,000-lb or the 10,000-lb style, better include lubing the side-shift rollers and sprockets every 4 to 5 hours. Otherwise they'll freeze up. Naturally, you have to have fittings on all lube points, so make sure they're there.

Save Those $$$$

You not only can save your outfit $$$$$, but you can get your QL9M1 Thermo King Refrigeration Unit (FSN 4110-967-9762) back into operation faster if you'll order the parts to the panel control assembly instead of the whole assembly. You'll find those parts listed in TM 5-4110-205-25P on page 7, under functional control group 0607.

A New Urgent

There's been another Urgent MWO you can add to the list in PS 171 — MWO 5-5130-224-50/1 (3 Aug 66), for Hammer, Electric, L and M Mfg Co., Strunk Model GH2, FSN 5130-542-4545 (Serial number range 000001 through 000700). If you have one of these, better turn it in to your support pronto so it can be shipped to depot.

Urgent To Normal

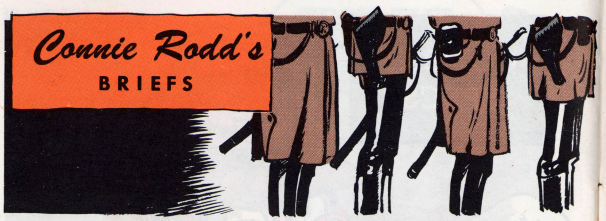
That MWO on the Harnischfeger Model WNG 300B arc-welding machine has been changed from URGENT to NORMAL and from 5-3431-216-50/1 to 5-3431-216-40/1 by Change 1 (21 Nov 66) to the basic MWO.

Match 'Em -- Never Mix 'Em

When you need a part for your generator, don't grab just any old generator parts manual to do your ordering. Make sure you've got the pub that belongs to your equipment. Check the latest DA Pam 310-4 and changes for the TM number. Most parts are not interchangeable between different generators so no use to try 'em.

Would You Stake Your Life right now on

Connie Rodd's BRIEFS



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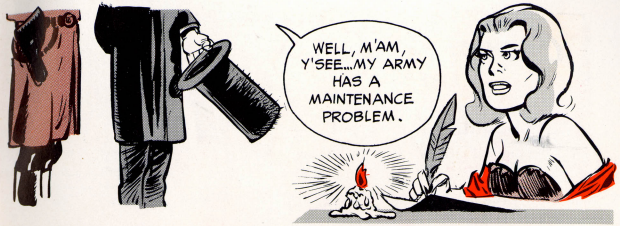


Whip Wipe

Taking your whip antenna sections apart once a day to clean 'em is the best way going to prevent rust and corrosion. Wipe male and female threads dry, and get the dirt out.

Mount Moisture?

Tight connections on your MT-1029 and MT-1898 mounts of your FM radios can head off serious moisture build-up in the junction boxes . . . with obvious benefits. So-o-o-o, push RT's and receivers firmly into mount receptacles, snug cables all the way up, and use receptacle covers when components or cables are removed.

Dry Chemical Extinguisher

Here's another one of those jot-'em-down items. The 2½-lb capacity hand type dry chemical fire extinguisher (FSN 4210-889-2221), and the dry chemical charge to go in it, (FSN 4210-889-2222), have been transferred to the Defense Construction Supply Center, Columbus, Ohio 43215. Your requisitions for these items should show Routing Identifier Code S9C.

Supply SOP

Property-book types, hold one:

The info in para 3-8b, AR 735-35 (Oct 65), and in para 12, Change 5 (Mar 66), AR 735-11 **does not** apply to **expendable** supplies. The instructions on quarterly droppage apply only to minor **non-expendable** items, like it's spelled out in AR 735-11. To drop expendable stuff that's **FWT,** check your local SOP and para 4-6a(1), AR 735-35.

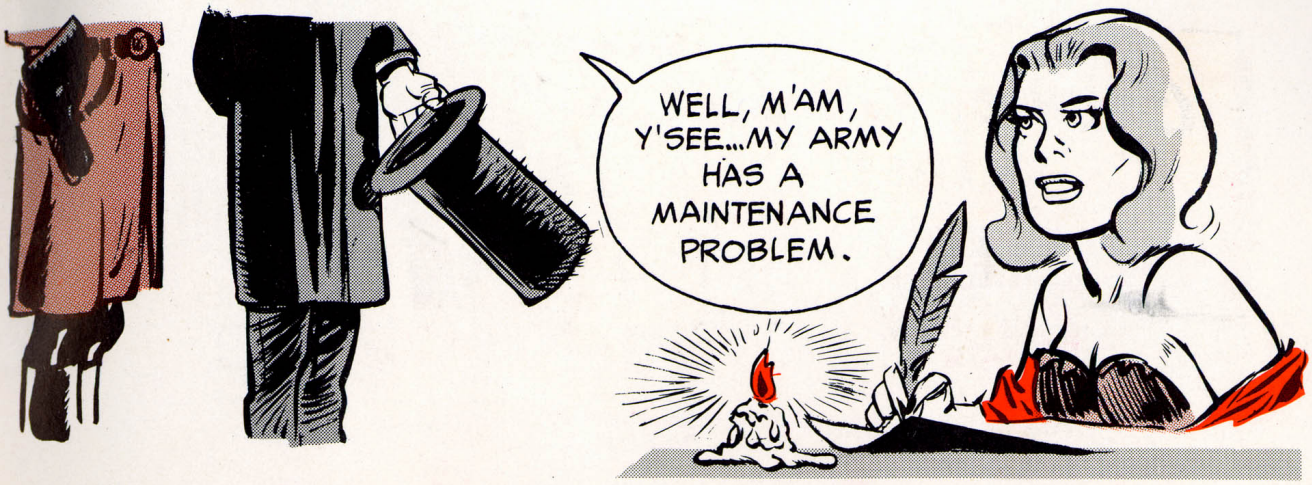
One Will Get You 10

One look at para 5-336(2)d, TM 55-1510-201-20 (Apr 66) tells you how to remove the fuel injector oil screen on 0-480-3 engines in your Foxtrot model Seminoles (U-8F). What it doesn't tell you is how much torque to use. Would you believe 10 ft-lbs? You should, 'cause that's the correct amount of oomph to use. You'll find it spelled out in Ch 1 to TB 750-931-1 (24 Jan 67).

Keep 'Em Moving

Make sure those slings and collapsible 500-gal fuel containers — containers of every description — get back into the supply system in good shape after they've been airdropped to you. The next load they carry may be for you!

Would You Stake Your Life right now on the Condition of Your Equipment?



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the Condition of Your Equipment?

PUHLEEZE!!

NEVER OPEN REPAIR PARTS PACKAGES UNTIL THE MAINTENANCE MAN IS READY TO USE THEM!

WHY?

BECAUSE, ONCE OUT OF ITS PROTECTIVE SHIPPING CARTON, A PART CAN BE CLOBBERED BY DIRT AND MOISTURE.